Advant® OCS
with Master software

On-line Builder
Engineering Stations
Version 2.7

User’s Guide

3BSE 009 602R501

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Chapter 1 Introduction

1.1 Before You Begin

This book describes On-line Builder in general. It explains how to install and setup On-line Builder and its menu commands. The manual is applicable for On-line Builder running on the following platforms:

- Windows NT 4
- HP-UX

On-line Builder is a command line driven software which is embedded into a window system. You enter the commands in the command window. All these commands are described in the *On-line Builder Reference Manual*.

This book is not intended to be the sole source of instruction for On-line Builder. Those people involved in application engineering, commissioning and field service should attend the applicable courses offered by ABB Automation.

1.2 Equipment Requirements

On-line Builder runs on special plug-in boards. These boards enable the communication with the control network and with the corresponding controllers, respectively.

- The Advant Station 100 Series Engineering Board – ISA is used in Windows NT 4 based environments. It communicates with Advant Controllers via a high speed serial line communication. The engineering board is part of Advant Station 130 Engineering Station (ISA), which is available for Windows NT.
- The Advant Station 100 Series Engineering Board – PCI is used in Windows NT 4 based environments. It communicates with Advant Controllers via a high speed serial line communication or via MasterBus 300/300E/300F. The engineering board is part of Advant Station 120 Engineering Station (PCI), which is available for Windows NT.
- The Real-time Accelerator Board (RTA) is used in HP-UX and Windows NT 4 based environments. It communicates with Advant Controllers via MasterBus 300/300E. The Real-time Accelerator Board is available as an option for Advant Station 500 Series Engineering Stations.

The X4 connector of the Advant Station 100 Series Engineering Board – ISA is necessary to communicate with another computer via the KERMIT command or to work with a PROM programmer. Supported PROM programmer types are PROMAC 2A of Japan Macnics Corporation and AF-9706 of Ando Electric Corporation. Both, KERMIT and PROM are supported with Advant Station 100 Series Engineering Board – ISA, only.

If you want to store your application in a flash card on Advant Controller 400 Series, you need a flash card programmer or a PCMCIA interface. Advant Station 100 Engineering Station is equipped with a proper PCMCIA interface and the corresponding software. For more information about reading and writing a flash card see Chapter 3.6.1.4, Read Flash Card, Chapter 3.6.1.5, Write Flash Card. For a description of the PCMCIA interface see Chapter 3.6.1.7, Flash Card Parameters.

Flash card programming is not supported on HP-UX environments.

1.3 How to Use This Book

This book is organized into chapters and sections as shown in Figure 1-1.

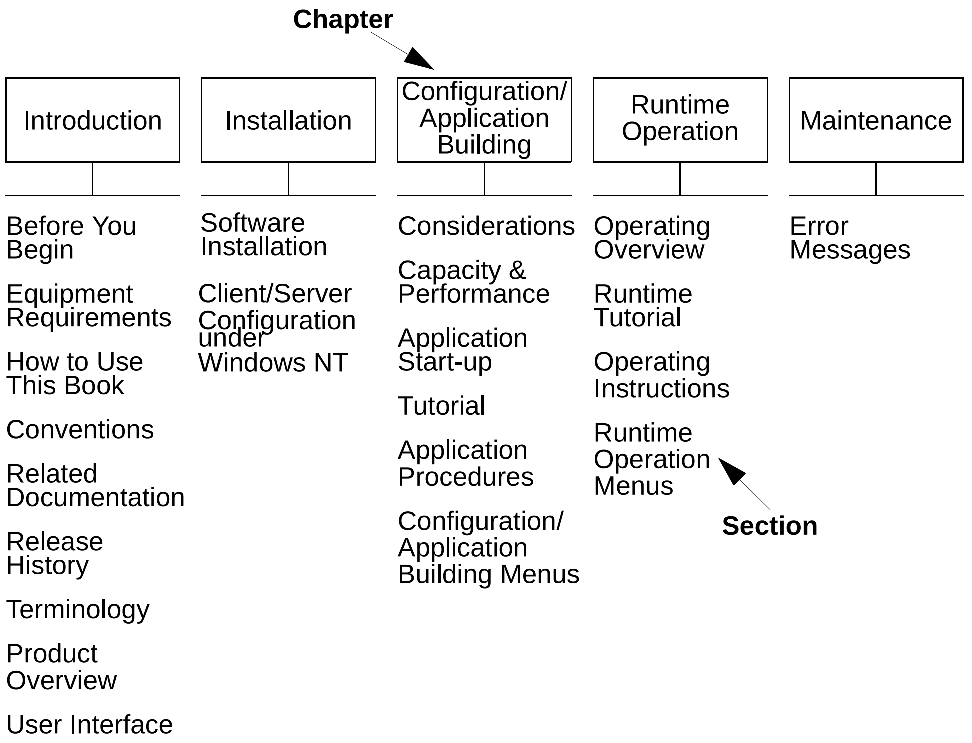


Figure 1-1. Organization of Manual

1.4 Conventions

The conventions below are used throughout this manual.

Names of referenced manuals are in *italics*.

Keyboard Interaction

When you read	You shall
• **File | Copy**	Open the **File** menu and choose the item **Copy**.
• **<Ctrl+M>**	Press the **Ctrl** key and the key labeled **M** simultaneously.

Syntax

To start a program or a command, enter the command syntax and press the **Enter** key. Specify the directory if needed.

- **Bold** strings are the command names and directories; they must be typed as they appear.
- *Italic* strings represent substitutable arguments and directories.

1.5 Related Documentation

Table 1-1. Related Documentation

Category	Title	Description
Station	Advant Station 100 Series Engineering Station User's Guide	Describes the Advant Station 100 Series Engineering Stations' hardware
	Advant Station 500 Series Engineering Station User's Guide	Gives a general overview of the engineering station. It also describes how to use the Structure Builder, Template Builder, Plant Documentation Builder, Function Chart Builder, On-line Builder, and how to access the Display Builder.
Software	On-line Builder Reference Manual	Describes all commands available. Command sets and working methods are described as well as command file handling aspects
	Application Builder User's Guide	Describes Application Builder
	AMPL Configuration Advant Controller 400 Series Reference Manual	Contains instructions for configuration and application programming of AC 410/450 controllers including command descriptions. The topics are: AMPL configuration principals, application programming, commissioning and testing, on-line editing, documentation, backup and transfer of application data
	AMPL PC and DB Element Libraries Release Notes	Contain instructions for installing the On-line Manuals.

1.6 Release History

Table 1-2 lists the major milestones in the development of On-line Builder software

Table 1-2. Release History

Version	Description
2.0	First Windows version of AdvaBuild On-line Builder
2.1	System message interpreter Command reference as WinHelp application

Table 1-2. Release History (Continued)

Version	Description
2.2	First common AdvaBuild On-line Builder for both platforms, Advant Station 100 Series Engineering Stations and Advant Station 500 Series Engineering Stations. Support for S800 I/O Improved MVI handling Support for User Defined PC Elements Backup of application dumps in flash card on Advant Controller 400 Series GETAB with graphical trend display
2.3	Support for Drives DB and PC elements Improved soft page break handling Support for fast communication on Advant Fieldbus 100 New MVI handling Support for CI543 (GCOM) PC variable view
2.4	Support for AC450 with software QC07-BAS41*1.0 Support for Instance names Support for different operating system platforms: Windows 3.11 and Windows NT 4
2.5	Support for AC450 with software QC07-BAS41*2.0 Support for PROFIBUS-DP
2.6	Support for Advant Station 100 Series Engineering Board – PCI New S800 DB Elements added
2.7	Support for AC450 2.3 with software QC07-BAS41*4.0 and Support for AC 410 1.5 with software QC01-BAS11*11.0 Support of LONWORKS fieldbus New S800 DB Elements added PROFIBUS enhancements

1.7 Terminology

The following is a list of terms associated with On-line Builder.

Terms	**Description**
ISA	The abbreviation “ISA” is used for “Industry Standard Architecture” bus, the predecessor of the PCI bus. The ISA bus is part of the architecture of your host personal computer.
PCI	The abbreviation “PCI” is used for “Peripheral Component Interconnect”. The Advant Station 100 Series Engineering Board - PCI communicates via this bus, which is part of the architecture of your host personal computer. This bus provides greater system performance than the ISA bus.
Advant Station 100 Series Engineering Stations	Is used as a common term to Advant Station 120 Engineering Station (PCI) and Advant Station 130 Engineering Station (ISA).
AS 100ES	Is used as a common abbreviation to Advant Station 120 Engineering Station (PCI) or Advant Station 130 Engineering Station (ISA).
AS 120ES	Advant Station 120 Engineering Station (PCI).
AS 130ES	Advant Station 130 Engineering Station (ISA).
Advant Station 500 Series Engineering Stations	Is used as a common term to Advant Station 515 Engineering Station and Advant Station 520i Engineering Station.
Engineering Station	Is used as a common term to Advant Station 120 Engineering Station (PCI) or Advant Station 130 Engineering Station (ISA).
Advant Controller 400 Series	Is used as a common term to Advant Controller 410 and Advant Controller 450.
RTA Board	Real Time Accelerator Board. The board is used in Advant Station 500 Series Engineering Stations.
AS 100EB	Is used as common term to Advant Station 100 Series Engineering Board – ISA or Advant Station 100 Series Engineering Board – PCI
Engineering Board	RTA Board or AS 100EB
DSPU131	The type designation of the ISA based AS 100EB.
PU516	The type designation of the PCI based AS 100EB.
PU513	The type designation of the ISA based RTA Board.

1.7.1 Glossary

ABB Master Representation

On-line Builder text files are stored in 7-bit ASCII code.

AMPL Source Code or Source Code

ABB Master Programming Language. Uses text format to specify data base and process control programs for Advant Controllers.

Command Set

A selection of On-line Builder commands to program an Advant OCS product.

CX command File

On-line Builder commands can be collected in command files. The execution of these files can be started with EXECFILE command.

CX operating System

The engineering board's operating system.

Document Texts

Footer texts for documents as source code lists or general project documentation. Different footer styles are available.

FFS2

Short for Microsoft Flash File System version 2.0.

Flash File System

A special-purpose formatting scheme for a flash memory card that allows such a card to be used much as if it were a RAM card.

On-line Builder Command

Is executed under the CX operating system on the Engineering Board. On-line Builder commands are grouped to command sets.

Net, Node

Short for Network, Node. The Network, Node defines the address of the Advant Station 120 Series Engineering Station (PCI) within a MasterBus 300 network.

Project

An environment for programming a process control system covering several Advant Controller or MasterPiece nodes.

Session

On-line Builder session. Loading a command set, in order to program an Advant OCS product.

SRCE and USER

Directories used mainly by On-line Builder. Important files on the SRCE directory are source code files (ABB Master representation 7-bit character) and dump files.

Target System

A physical location in an Advant Controller or MasterPiece process control network. A target or (physical) node usually contains an intelligent device like an Advant Controller or a MasterPiece.

1.8 Product Overview

On-line Builder is available as

- An option of the AMPL Control Configuration which is an aspect system of AdvaBuild Engineering Software for Windows NT
- An option for Advant Station 500 Series Engineering Stations

On-line Builder is a tool for system configuration and application configuration of:

- Advant Controller 400 Series
- MasterPiece 200/1
- MasterPiece 51
- MasterGate 230/1
- Advant Station 500 Series Operator Stations
- MasterView 800/1 Series.

You can use it during all phases of your work, for engineering, commissioning and testing, and in the field service. The range of functions extends from dimensioning of the data base and AMPL program areas, loading and dumping of applications, testing and fault tracing, dynamic display of variables to commandfile handling, network management, and post mortem analysis. Post mortem analysis is available on Advant Station 100 Series Engineering Stations.

On-line Builder can be used as stand-alone tool. Further on it works hand in hand with Function Chart Builder. This is essential when it comes to bulk data handling or high level function oriented project engineering, using type circuits and circuits.

1.9 User Interface

On-line Builder has – independent of the platform it is running on – a Windows user interface. On Advant Station 500 Series Engineering Station you can switch between Windows and OSF-Motif user interface style.

Chapter 2 Installation

2.1 Software Installation

For installation refer to the *On-line Builder Release Notes* related to the used software.

2.2 Client / Server Configuration (AS 100EB / Windows NT only)

On-line Builder consists of a client and a server part. But only when you run On-line Builder on an Advant Station 100 Series Engineering Board (AS 100EB) based on Windows NT, you can take advantage of this splitting. Together with AS 100EB you can use On-line Builder in two ways:

- **Running client and server on different engineering stations:**
  The engineering board is installed in one Advant Station 100 Engineering Station enabling the communication to controllers. The On-line Builder on this station acts as server. On another PC On-line Builder is installed, too. This is the client. Both computers are connected to the local area network (LAN) and are based on Windows NT 4.

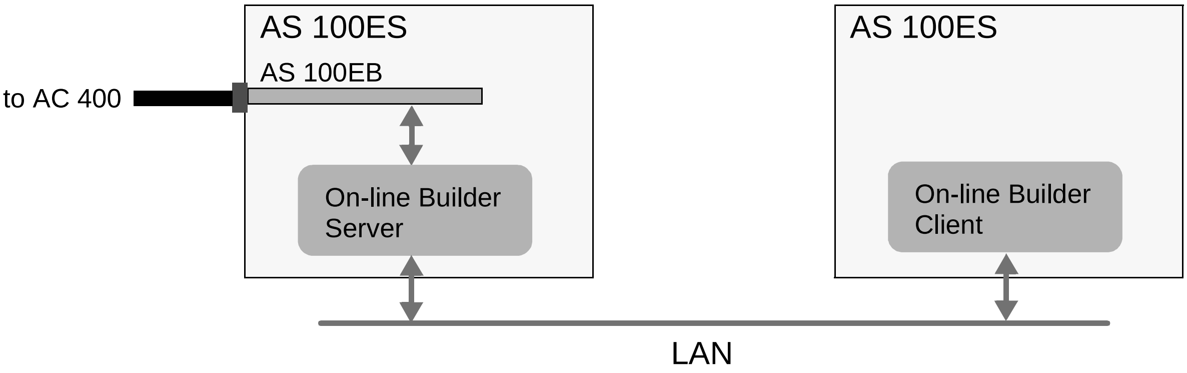


Figure 2-1. On-line Builder Server/Client on Different Engineering Stations

- **Running client and server on the same engineering station:**
  The AS 100EB is installed in your local PC.

If you use On-line Builder together with the RTA board, it appears as a single application and no client/server configuration is possible.

2.2.1 Client and Server on Different Engineering Stations

To run client and server of On-line Builder on separate engineering stations, you have to perform two additional steps:

- On the server: Specify launch and access permissions to grant other users access to the servers’s engineering board.
- On the Client: Select a server you want to work with.

2.2.1.1 Server Configuration

In order to configure the server PC execute the following steps:

1. Install On-line Builder software.
2. Set up the AS 100EB with the utility Engineering Board Setup (see Section 2.2.2, Client and Server on the Same Engineering Station).
   - Advant Station 100 Series Engineering Board – ISA:
     Configure the I/O address of the AS 100EB, if you do not use the default I/O address.
   - Advant Station 100 Series Engineering Board – PCI:
     Specify the Network, Node address of the AS 100ES.
3. Log in as “Administrator” to configure the server PC
4. Start the program dcomcnfg.exe on the system32 directory of Windows NT which provides the **Distributed COM Configuration Properties** dialog:

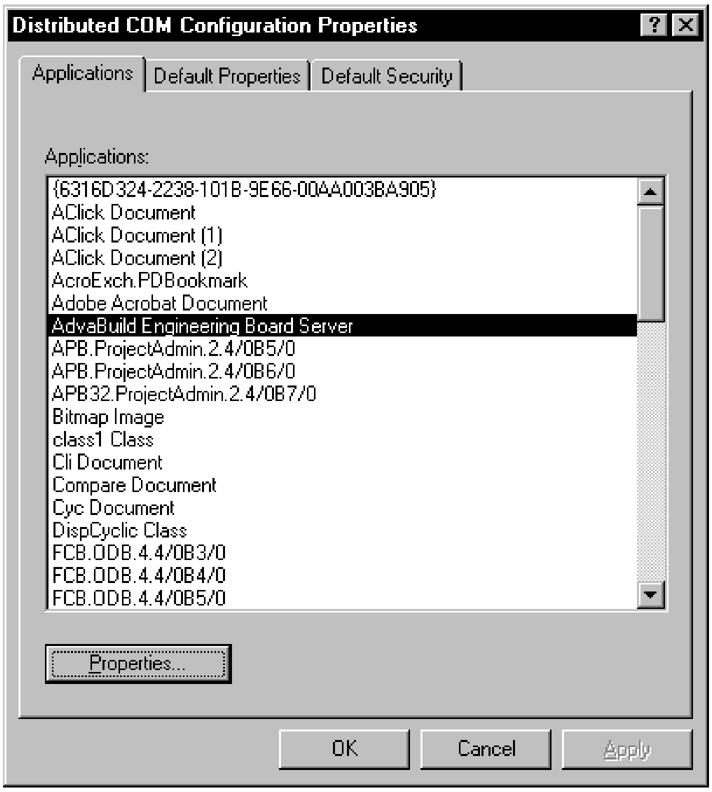
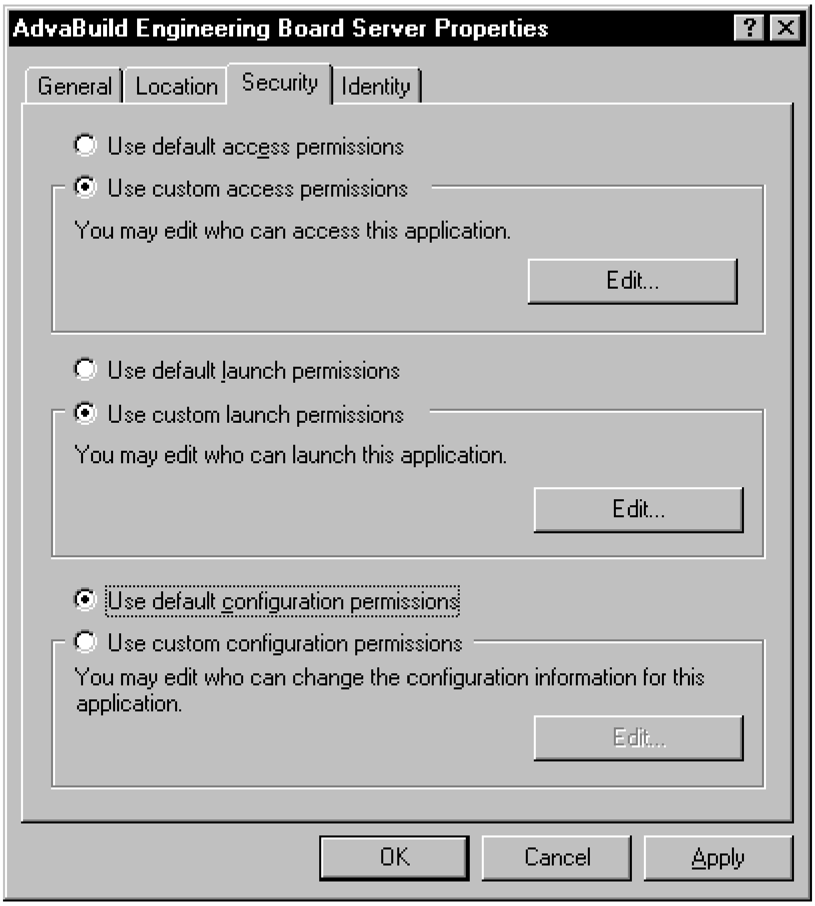


Figure 2-2. Distributed COM Configuration Properties Dialog

Select the entry **AdvaBuild Engineering Board Server** and click the **Properties** button to configure the server properties:



○ Use default access permissions

● Use custom access permissions

You may edit who can access this application.

○ Use default launch permissions

● Use custom launch permissions

You may edit who can launch this application.

● Use default configuration permissions

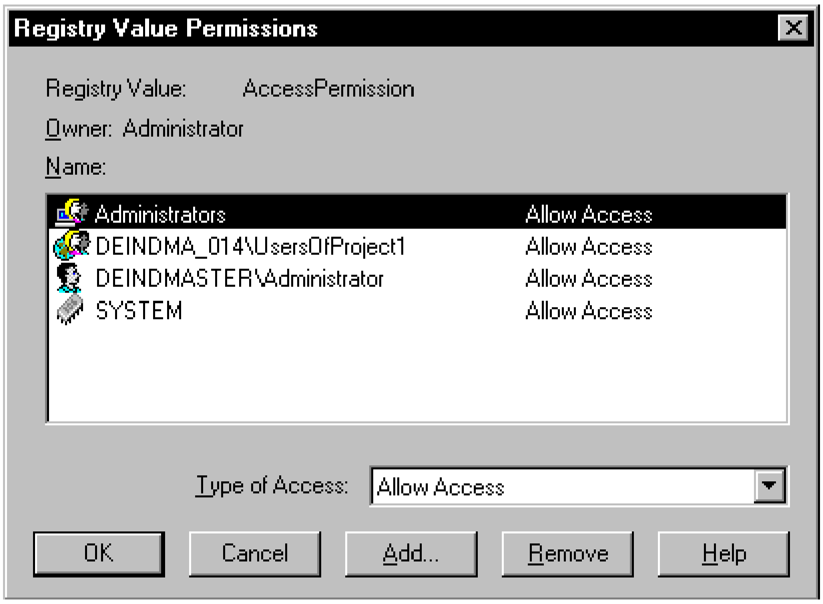
○ Use custom configuration permissions

You may edit who can change the configuration information for this application.

Figure 2-3. AdvaBuild Engineering Board Server Properties

5. Select the **Security** tab
6. Select **Use custom access permissions**

   Click **EDIT** and configure the "Access Permission" (see Figure 2-4).



Registry Value: AccessPermission
Owner: Administrator
Name:

Administrators	Allow Access
DEINDMA_014\UsersOfProject1	Allow Access
DEINDMASTER\Administrator	Allow Access
SYSTEM	Allow Access

Type of Access: Allow Access

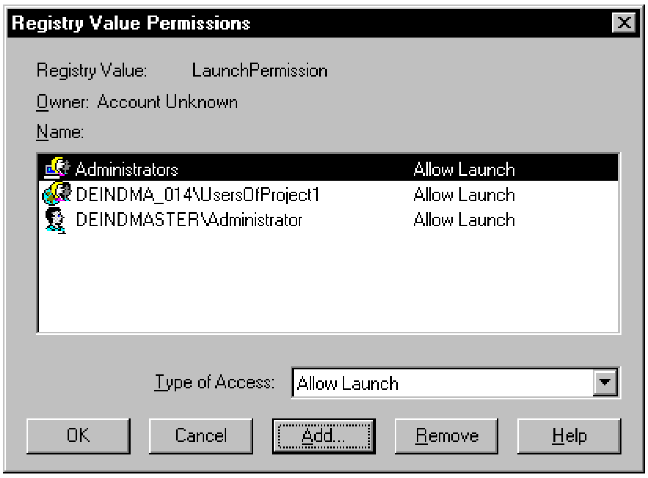
Figure 2-4. Registry Value Permissions

Add all users which are allowed to use this PC as Engineering Board Server for On-line Builder and add the SYSTEM to have access, too. Press the button **OK**. You come back to the AdvaBuild Engineering Board Server Properties dialog.

7. Select **Use default configuration permissions** for this application.

8. Select **Use custom launch permissions**

   Click **EDIT** and configure “Launch Permissions” for all users which are allowed to use this PC as Engineering Board Server for On-line Builder (see Figure 2-5).



Registry Value: LaunchPermission

Owner: Account Unknown

Name:

Administrators	Allow Launch
DEINDMA_014\UsersOfProject1	Allow Launch
DEINDMASTER\Administrator	Allow Launch

Type of Access: Allow Launch

Figure 2-5. Registry Value Permissions

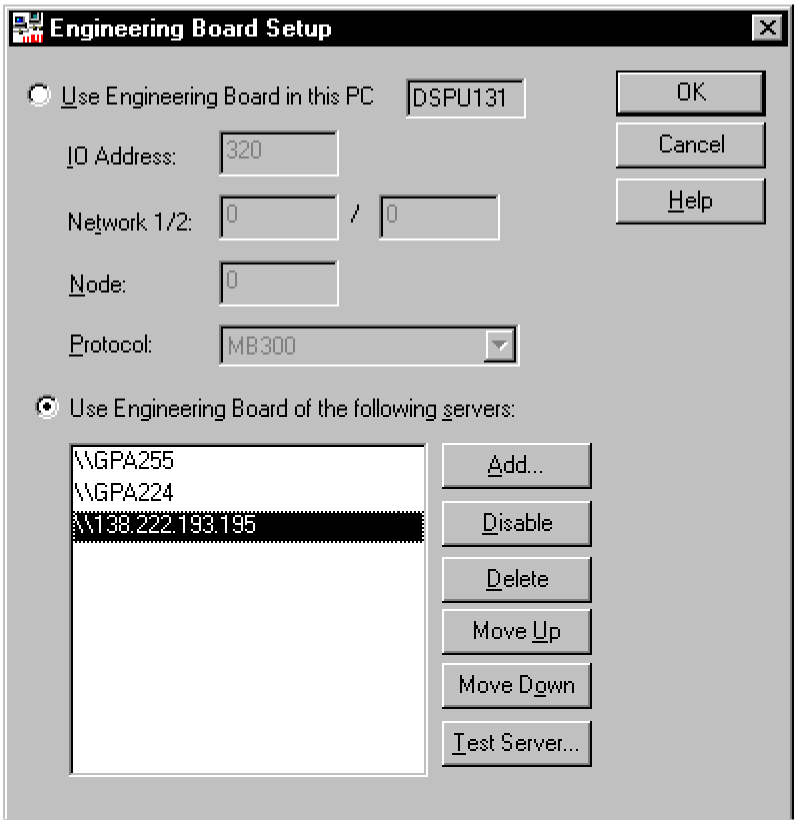
DANGER

Because On-line Builder is part of your control system, be careful to which users you give access to the Engineering Board Server.

2.2.1.2 Client Configuration

On the client PC you need to configure which Engineering Board Server you want to use. The utility Engineering Board Setup which is available in the **Utilities** folder guides you through this procedure.

It is available when you select the **Engineering Board Setup** tab in the **EBSetup** dialog.



○ Use Engineering Board in this PC: DSPU131

IO Address: 320

Network 1/2: 0 / 0

Node: 0

Protocol: MB300

● Use Engineering Board of the following servers:

\\GPA255
\\GPA224
\\138.222.193.195

Figure 2-6. Engineering Board Setup - Client and Server on different Stations

Select **Use Engineering Board of the following servers** if you want to use an engineering board installed on a PC in the network. The On-line Builder tries to use an engineering board installed on a server starting with the first computer in the list. The first running and not locked PC is used as server.

Dialog Controls

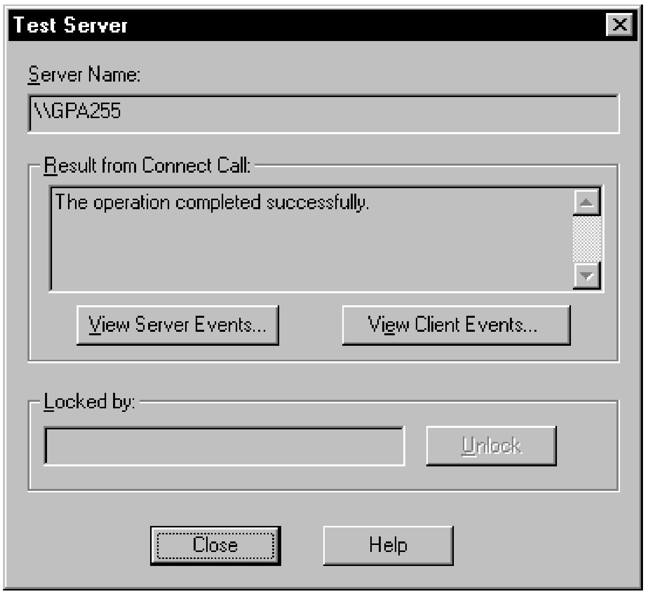
Add
Click the **Add** button to add another computer to the server list.

Disable
Click **Disable** to disable a PC for use as Engineering Board Server.

Delete
Click **Delete** to remove a PC from the Engineering Board Server list.

Move Up, Move Down
You can rearrange the server list, using the **Move Up** and **Move Down** Button

Test Server
By pressing this button you can test the selected Engineering Board Server; the following mask is opened:



Test Server

Server Name: \\GPA255

Result from Connect Call: The operation completed successfully.

Locked by:

Figure 2-7. Test Server

Dialog Controls

Result from Connect Call
The text shown here contains the result of the connect call. The most common messages are:

- **The Operation completed successfully**
  The server PC is correctly configured and is able to work as server for On-line Builder.
- **The RPC server is unavailable**
  This message is caused when the server PC could not be reached. Possible reasons are: The server is switched off or the network connection fails or the selected PC does not run Windows NT.
- **Access is denied**
  You are not allowed to access this server PC, see Section 2.2.1.1, Server Configuration for more information.
- **Class not registered**
  On-line Builder is not installed on the server PC or the registration is destroyed

View Server Events or View Client Events
You can inspect any event on the server side by pressing **View Server Events.** The same can be done for events on the client.

Locked By
If a server is locked the locking user is displayed in the **Locked By** control.

Unlock
With this button you can break the lock.

WARNING

The session established by this user is interrupted.

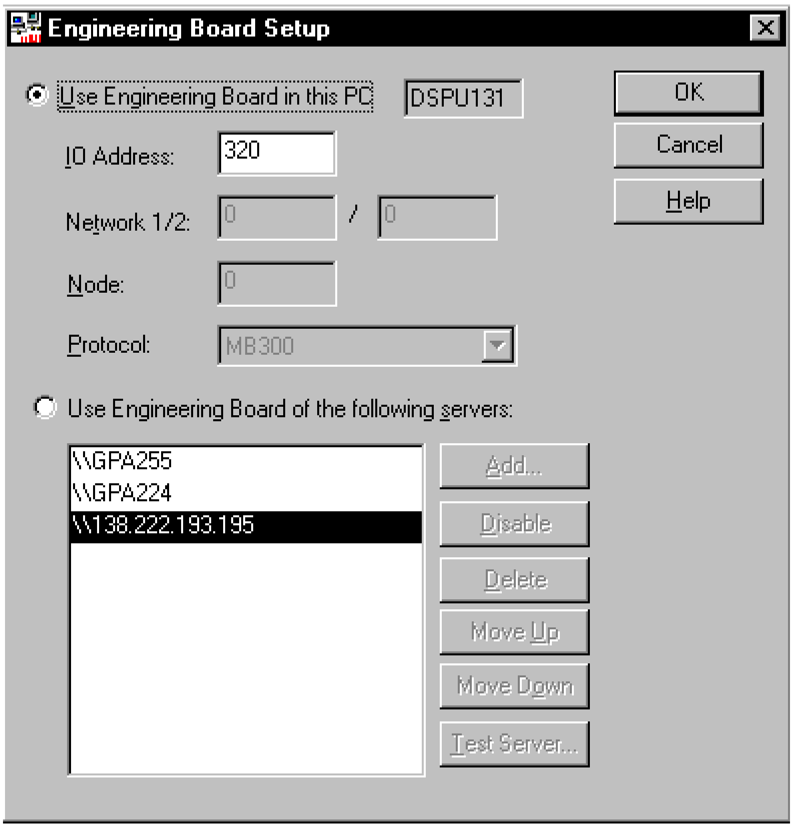
2.2.2 Client and Server on the Same Engineering Station

2.2.2.1 Advant Station 100 Series Engineering Board – ISA

Start Engineering Board Setup form the **Start | Advant | Engineering | Utilities** folder.

Select the **Engineering Board Setup** tab in the **EBSetup** dialog.

Check **Use Engineering Board in this PC** if the engineering board is installed in your local computer.



Engineering Board Setup

● Use Engineering Board in this PC: DSPU131

IO Address: 320

Network 1/2: 0 / 0

Node: 0

Protocol: MB300

○ Use Engineering Board of the following servers:

\\GPA255
\\GPA224
\\138.222.193.195

Figure 2-8. Engineering Board Setup (ISA) - Client and Server on the same Station

Dialog Controls

IO Address

Enter here the I/O address for the engineering board, this value must correspond to the DIP-switch positions on the engineering board.

NOTE

Normally the engineering board operates at I/O address 320h, which is the default DIP-switch position on the board (see Table 2-1).

If you want to use another address, in order to avoid address conflicts within your PC configuration enter the I/O address for the engineering board; make sure that this value corresponds to the DIP-switch positions on the engineering board.

Table 2-1. DIP-Switches of AS 100EB

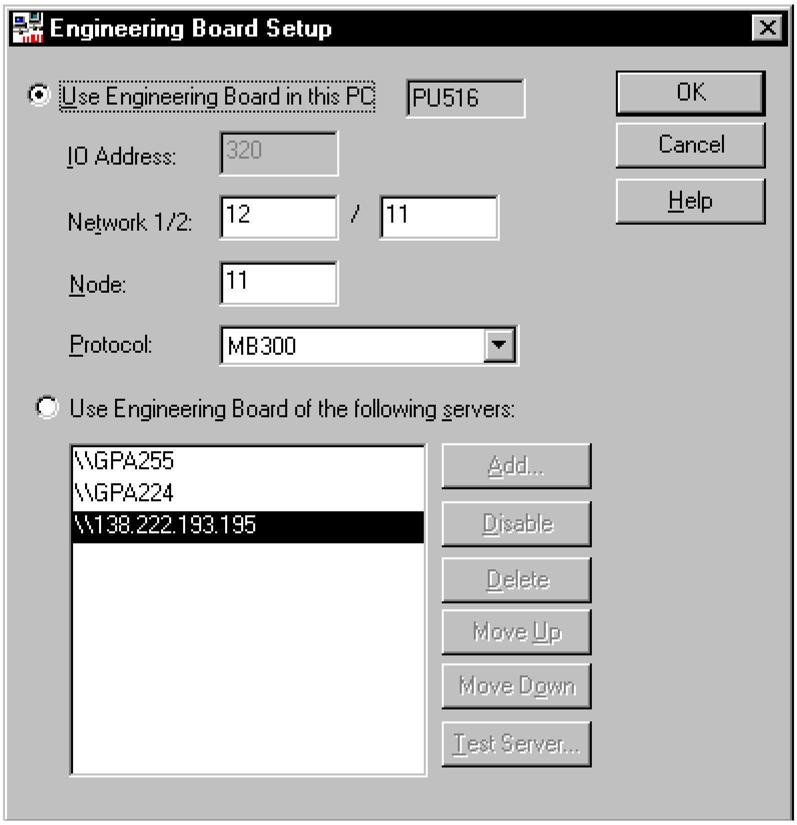
Switch	**Dip 1**	**Dip 2**	**Dip 3**	**Dip 4**	**Dip 5**	**Dip 6**	**Dip 7**	**Dip 8**
Default Position	CLOSED or ON	CLOSED or ON	CLOSED or ON	OPEN or OFF	CLOSED or ON	CLOSED or ON	OPEN or OFF	OPEN or OFF
Addr. Bit	ADDR2 2^2	ADDR3 2^3	ADDR4 2^4	ADDR5 2^5	ADDR6 2^6	ADDR7 2^7	ADDR8 2^8	ADDR9 2^9
Default Value	0	0	0	1	0	0	1	1

2.2.2.2 Advant Station 100 Series Engineering Board – PCI

Start Engineering Board Setup form the **Start | Advant | Engineering | Utilities** folder.

Select the **Engineering Board Setup** tab in the **EBSetup** dialog.

Check **Use Engineering Board in this PC** if the engineering board is installed in your local computer.



Engineering Board Setup

● Use Engineering Board in this PC: PU516

IO Address: 320

Network 1/2: 12 / 11

Node: 11

Protocol: MB300

○ Use Engineering Board of the following servers:

\\GPA255
\\GPA224
\\138.222.193.195

Figure 2-9. Engineering Board Setup (PCI) - Client and Server on the same Station

Dialog Controls

Network 1/2
Insert the first and the second network number of your Advant Station 100 Series Engineering Station.

Node
Insert the node number Node of your Advant Station 100 Series Engineering station.

Protocol
Select the MasterBus protocol. Supported MasterBus protocols are MB300, MB300F, and MB300E.

Chapter 3 Configuration/Application Building

3.1 Considerations

Use the On-line Builder to design and test application programs by entering commands on the keyboard or by using command files.

On Advant Station 100 Series Engineering Stations the Windows user interface is used. There you can start up the On-line Builder from Application Builder or by the On-line Builder's shortcut.

On Advant Station 500 Series Engineering Stations the On-line Builder is started by opening the **ON-LINE** view of a node object in the Structure Builder.

On-line Builder commands are grouped together to a series of command sets. A set includes all commands necessary to work with a dedicated target like Advant Controller 400 Series or Advant Station 500 Series Operator Station. To start a session you select one of the sets from a menu.

3.1.1 Flash Cards

Advant Station 100 Engineering Station is equipped with a PCMCIA interface. To operate with flash memory cards a file system is needed. Currently the On-line Builder supports the Microsoft Flash File System™ version 2.0 (FFS2).

Advant Controller 400 Series are equipped with two different flash cards, one for the system software and one which can store the application. The latter one will be used after a cold start to reload the application into the controller.

The On-line Builder supports the preparation of flash cards with application dumps. These flash cards must be formatted with the FFS2 file system, a file system that differs from the one used for the system software flash cards.

AMPL Control Configuration option On-line Builder supports the following flash card types:

- Intel iMC004FLSA 4 MBytes
- Intel iMC010FLSA 10 MBytes
- Intel iMC020FLSA 20 MBytes.

By default, the On-line Builder supports

> Operating system platform Windows NT 4:
> CardWare™ by Award Software International Inc. for flash card operation for the Pentium based Advant Station 100 Series Engineering Stations. This PCMCIA software is installed on Advant Station 100 Series Engineering Stations.

3.1.2 Platform Differences

Commands

A number of commands is only available for Advant Station 100 Series Engineering Board – PCI, but also some of the commands available for Advant Station 100 Series Engineering Board – ISA are not supported by Advant Station 100 Series Engineering Board – PCI. They are excluded from the command set.

The Table 3-1 shows the availability of the commands.

Table 3-1. Availability of Commands

Command	Advant Station 100 Series Engineering Board ISA	Advant Station 100 Series Engineering Board PCI	Real Time Accelerator Board
ALUS	available	**not** available	**not** available
ANSYS	available	available	**not** available
CALCCHS	available	**not** available	**not** available
CLOSE	available	available	**not** available
COSESS	**not** available	available	**not** available
CSSD	available	**not** available	**not** available
DFLEV	**not** available	available	**not** available
DFNETUSE	**not** available	available	**not** available
DFTARG	**not** available	available	**not** available
DURWM	available	**not** available	**not** available
ETTY	available	**not** available	**not** available
HARDCOPY	available	available	**not** available
INSTASK	available	**not** available	**not** available
KERMIT	available	**not** available	**not** available
LAVOL	available	**not** available	**not** available
LCU	available	available	**not** available
LDURWM	available	**not** available	**not** available
LIQB	available	available	**not** available

Table 3-1. Availability of Commands

Command	**Advant Station 100 Series Engineering Board ISA**	**Advant Station 100 Series Engineering Board PCI**	**Real Time Accelerator Board**
LOCPSET	**not** available	available	available
LORWM	available	**not** available	**not** available
LSIG	available	available	**not** available
LSYSHI	available	available	**not** available
LSYSM	available	available	**not** available
LTIMQ	available	available	**not** available
LTRQ	available	available	**not** available
LTSL	available	available	**not** available
Network Expert Commands	available	**not** available	**not** available
OPEN	available	available	**not** available
PROM	available	**not** available	**not** available
RECV	available	available	**not** available
SEND	available	available	**not** available
UHR	available	**not** available	**not** available
UNCSSD	available	**not** available	**not** available

The following On-line Builder commands are available on Advant Station 500 Series (HP-UX), only:

`dobackup, dorestore, PUbackup, PUBoards, PUlock, PUrelease, PUrestore, PUvoldef, rta_boot`

You find a description of all On-line Builder commands in the *On-line Builder Reference Manual*.

Command Levels

Table 3-2. Command Levels

Command Level	Distinguishing Mark	Advant Station 100 Series Engineering Board ISA	Advant Station 100 Series Engineering Board PCI
PC level	#	available	available
System Level	*	available	available
Local Level	?	**not** available	available

Within the "Local Level" you are not connected to any target and no session is started yet.

Command Sets

The On-line Builder commands are grouped together to a series of command sets. These command sets include all commands necessary to work with a dedicated target system. For a description of how to work with command sets see Section 3.5.1, How to Work with Command Sets. The command set "Post Mortem Analysis" is possible only, if the connection to a target system is performed via a serial line, not via network. Therefore this function is not available when using the Real Time Accelerator Board.

Connection to Target Systems

In Advant Station 500 Series Engineering Stations the **Real Time Accelerator Board** is used. It communicates with Advant Controllers via MasterBus 300/300E.

In Advant Station 100 Series Engineering Stations the **Advant Station 100 Series Engineering Board – ISA** or the **Advant Station 100 Series Engineering Board – PCI** are used.
The Advant Station 100 Series Engineering Board – ISA communicates with Advant Controllers via a high speed serial line communication. Advant Station 100 Series Engineering Board – PCI communicates via a high speed serial line communication or via MasterBus 300/300E/300F.

Other Differences

Differences of keys or menu commands are described in Chapter 4, Runtime Operation.

3.2 Capacity and Performance

Not applicable.

3.3 Application Start-up

On-line Builder will normally be started from other applications like Structure Builder, Application Builder, or AdvaCommand on a node selected within this application. If you start On-line Builder directly, it will open the previously used node.

When using the AS 100EB you can start-up an On-line Builder session in two different ways, menu driven and automatic. Use the menu command **Options | Setup** to define the start-up function (see also Section 3.6.4.1, Setup).

Automatic

On-line Builder automatically starts a session with the selected target system when called from the Application Builder or the Structure Builder. The session type is “Remote via Network”.

Menu Driven

On Advant Station 100 Series Engineering Stations you always use the same start-up procedure when starting On-line Builder to choose the session type. Proceed as follows:

- **Advant Station 100 Series Engineering Board – ISA**
  - To display the list of supported Advant OCS products (target systems) and to start-up an On-line Builder session use the key combinations <**Alt+B**> or <**Ctrl+BREAK**>.
  - Activate the according command set entering the number (displayed on the left hand side of the product) at the command line. You can display also a list of additional session types entering the number “10” at the command line.
- **Advant Station 100 Series Engineering Board – PCI**
  - Load the corresponding command set. How to load the corresponding command set is described in the Section 3.5.1, How to Work with Command Sets
  - Enter the command **SLTARG** *net,node* to connect to a target system.

When using the RTA Board On-line Builder has a menu for command set selection as described in Section 3.5.1.2, Command Sets Together with Advant Station 100 Series Engineering Board – PCI or RTA Board. When the command set is loaded, enter the command **SLTARG** *net,node* to connect to a target system.

3.4 Tutorial

Not applicable.

3.5 Application Procedures

3.5.1 How to Work with Command Sets

The On-line Builder commands are grouped together to a series of command sets. A set includes all commands necessary to work with a dedicated target like Advant Controller 400 or Advant Station 520 Operator Station. To start a session you select one of the sets from a menu.

During the session the commands of the selected command set are available. When you terminate the session with the TSESS command, you must select again a command set to start a new session.

Selection of commands differs depending on the used engineering board. When you use the Advant Station 100 Series Engineering Board – ISA the selection menu will be displayed in the On-line Builder main window. When On-line Builder runs on the Advant Station 100 Series Engineering Board – PCI or the Real Time Accelerator Board (RTA Board), it has an additional menu entry, named **Command Sets**. The Real Time Accelerator Board supports only a subset of the menu entries, because there is no high speed serial line communication available. The menu entries Connection via Network, Blocking on Overload, Post Mortem Analysis are not supported for the Real Time Accelerator Board. Moreover the menu entry Connecting via Network is not available for the Advant Station 100 Series Engineering Board – PCI, too.

When you terminate the session with the TSESS command, the menu for selection of command sets will be displayed again when using Advant Station 100 Series Engineering Board – ISA. When you select another set, the previous command set will be exchanged by the new one. When On-line Builder runs on the Advant Station 100 Series Engineering Board – PCI or the RTA Board, select a new set from the **Command Sets** menu.

The menus for selection of a command set are different on Advant Station 100 Series Engineering Station and on engineering stations or operator stations of type Advant Station 500. Therefore see Section 3.5.1.1, Command Sets Together with Advant Station 100 Series Engineering Board – ISA or Section 3.5.1.2, Command Sets Together with Advant Station 100 Series Engineering Board – PCI or RTA Board for both kinds of menus.

3.5.1.1 Command Sets Together with Advant Station 100 Series Engineering Board – ISA

Table 3-3. Available Command Sets

Menu **Supported ABB Master Products**	**Submenu** **Available Activities**
1. Advant Controller 400	1. Advant Controller 400 Programming 2. Advant Controller 400 Programming via Network 3. Advant Controller 400 Blocking on Overload 4. Post Mortem Analysis 5. Switching Running PC Programs

Table 3-3. Available Command Sets

Menu **Supported ABB Master Products**	**Submenu** **Available Activities**
2. Advant Station 500 Operator Station	-
3. Advant Station 500 Engineering Station	-
4. MasterPiece 200	1. MasterPiece 200 Programming 2. MasterPiece 200 Programming via Network 3. MasterPiece 200 Blocking on Overload 4. Post Mortem Analysis 5. Switching Running PC Programs
5. MasterView 800	1. MasterView 800 Programming 2. MasterView 800 Programming via Network 3. Post Mortem Analysis
6. MasterBus 300	1. Network Layman Commands 2. Network Expert Commands
7. MasterGate 230	1. MasterGate 230 Programming 2. MasterGate 230 Programming via Network 3. Post Mortem Analysis
8. MasterPiece 51	1. MasterPiece 51 Programming locally 2. MasterPiece 51 Programming via MasterFieldbus
9. Advant Station 100 Engineering Station	-
10. More …	1. Expert Commands 2. AccuRay board handling 3. User defined Set 1 (DEAO01A0) 4. User defined Set 2 (DEAO02A0) 5. User defined Set 3 (DEAO03A0) 6. User defined Set 4 (DEAO04A0) 7. User defined Set 5 (DEAO05A0)

The command selection menu consists of a two level menu. On the first level labelled **Menu** the targets you can work with are listed. On the second level called **Submenu** you can specify a certain way of working with the selected target, e.g. via Network.

First of all **Menu** will be displayed. You are asked to select one target type by entering the number written to the left of the target type. Afterwards the corresponding **Submenu** will be displayed and you can select the working mode. Table 3-3 displays both menus together. For some targets no submenu is available.

Connection via Network

Select connection to a target via Network if you want to work with another target than your engineering station is physically connected to. In this case you are at first asked to enter the network and node number. Afterwards the Advant Station will be remotely connected to the corresponding target.

Blocking on Overload

Select this working mode if the target has come to an halt due to an overload situation. It makes it possible to block all PC programs with the BL command.

Post Mortem Analysis

With this working mode you can analyze a halted target.

Switching Running PC Programs

With this commands set you can switch the execution from one program to another one. The running program will be blocked and the blocked one will take over.

Expert Commands

With this command you can select special maintenance commands. They are for ABB Fieldservice personnel only. These commands are not part of the standard products, but of the software package "Expert Utilities".

User Defined Selection

With this working mode you can select a user defined command set created with the MS-DOS command **ADDCP** (see Technical Information Binders). This mode is for ABB Fieldservice personnel only.

3.5.1.2 Command Sets Together with Advant Station 100 Series Engineering Board – PCI or RTA Board

When running together with the Real Time Accelerator Board or the Advant Station 100 Series Engineering Board – PCI On-line Builder presents an additional menu, called **Command Sets**.

Select one of the items to start loading the corresponding set of commands. The menu is shown in Figure 3-1.

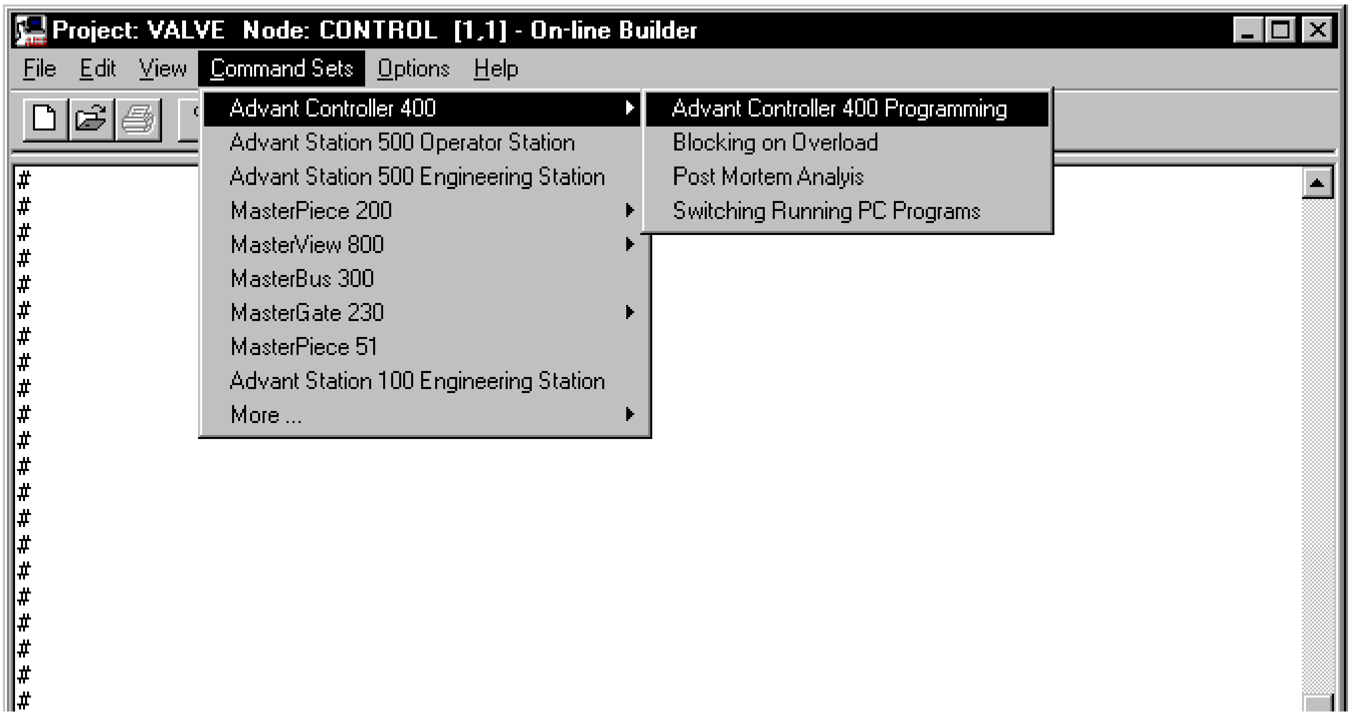

Project: VALVE Node: CONTROL [1,1] - On-line Builder
File
Edit
View
Command Sets
Options
Help
Advant Controller 400
Advant Station 500 Operator Station
Advant Station 500 Engineering Station
MasterPiece 200
MasterView 800
MasterBus 300
MasterGate 230
MasterPiece 51
Advant Station 100 Engineering Station
More ...
Advant Controller 400 Programming
Blocking on Overload
Post Mortem Analyis
Switching Running PC Programs

Figure 3-1. Command Sets Menu

The available menu commands are listed in Section 3.6.5, Command Sets Menu.

For a description of the command sets see Section 3.5.1.1, Command Sets Together with Advant Station 100 Series Engineering Board – ISA. The following sets are not supported when using the Real Time Accelerator Board:

Blocking on Overload

Blocking on Overload is not possible when working with the RTA Board because the connection is done via Network.

Post Mortem Analysis

Post Mortem Analysis is possible only, if the connection is performed via a serial line, not via Network. Therefore this function is not implemented when working with the RTA Board.

3.5.2 Command Line Editing

3.5.2.1 Keys and Default Mode

Use keys according to Table 3-4 to move the cursor within the command line.

Table 3-4. Keys and Default Mode

On AS 100ES use the key	On AS 500ES use the key	To
<**Ins**>	no key available	Toggle between insert and overwrite mode. The default editing mode is the insert mode.
<**Del**>	<**Delete character**>	Delete the character at the cursor's position
<**Home**>	no key available	Move the cursor to the first position in the command line
<**End**>	no key available	Move the cursor to the last position in the command line
<**Left arrow**>	<**Left arrow**>	Move the cursor left
<**Right arrow**>	<**Right arrow**>	Move the cursor right
<**Ctrl+left arrow**>	<**Ctrl+left arrow**>	Move to the next word left
<**Ctrl+right arrow**>	<**Ctrl+right arrow**>	Move to the previous word right
<**back space**>	<**back space**>	Delete the character left of the cursor
<Alt>	no key available	Stop scrolling of listings
<Alt+up arrow>	**<Ctrl+up arrow>**	Scroll one line upwards
<Alt+down arrow>	**<Ctrl+down arrow>**	Scroll one line downwards
<Alt+page up>	**<Ctrl+page up>**	Scroll one page upwards
<Alt+page down>	**<Ctrl+page down>**	Scroll one page downwards

3.5.2.2 Command Line Roll-Back

The On-line Builder includes a command line roll-back.

Use the **arrow** keys (up or down) to step through the command line history (that is, to get the previous entered commands back into the command line). The On-line Builder stores up to 25 command lines.

It is also possible to search for a command:

1. Type the beginning of the command you are looking for
2. Press the **F8** key (or use menu item **Options | Search for Command**)

The command line roll-back buffer is then searched for the best match.

3.5.2.3 Copy & Paste

Use the **Edit** menu commands **Copy** and **Paste**, in order to transfer data to/from the clipboard.

COPY

Select the text you want to copy with the mouse. Use **Edit | Copy** menu command to copy the text into the clipboard. To select a whole word, double click on it. Selected text in one of the On-line Builder's own windows can be copied directly into the command line by pressing the right mouse button.

In addition to text, you can also select graphics.

PASTE

You can paste text from the clipboard to the command line using the **Edit | Paste** menu command, or by using the right mouse button. You can replace a text with the content of the paste buffer, when you select a text in the actual command line before you paste.

In addition to text, you can also paste graphics into a graphics tool.

3.5.2.4 Drag & Drop

This command is not available on Advant Station 500 Series Engineering Stations.

On-line Builder supports the following drag & drop functions from the Windows' File Manager. You may:

- Drop a single PC or DB source code file into the On-line Builder window. Files in ABB Master representation (extension *.AA; *.BA) as well as in general representation (8-bit ANSI; extension *.AAX; *.BAX) are accepted, then the according source code translation command (**TRDBS**, **TRPCS**) is started.
- Drop an On-line Builder command file (extension *.CF) into the On-line Builder window, in order to execute that command file. The On-line Builder requires a confirmation before execution.

CAUTION

> Executing a file drop with a file in general representation overwrites an existing file in ABB Master representation.

For security reasons you can confirm this message by keyboard only, but not using the mouse.

Limits

- Only single-file drops are accepted
- File drops are not possible if On-line Builder is busy or if the session has been terminated

3.5.3 Printing

3.5.3.1 Introduction

Two different printing modes are available:

- Print Page by Page

  Each page is printed directly and page by page as single print jobs when a new page has been started. By default, this option is selected (it is not recommended to use this option when printing via network).

- Print all Pages together

  All pages are printed as one print job (e.g. if you are using a network printer).

Use the **Options | Setup** menu command to define the preferred printing mode.

NOTE

When starting to print the On-line Builder collects all the printer output in a temporary file. The field "PRN" in the status line of the On-line Builder informs you about the number of pages currently stored in your buffer.

3.5.3.2 On-line Builder Print Commands

NEWDOC

Closes the current printer document and print it on the current printer. You can use also the **File | Print** menu command to print, which supports all standard print functions.

DELDOC

Removes all pages from the current printer document. You can use also the **File | Delete Print Document** menu command.

NEWPAGE

Starts a new page on the current printer document.

INPR

Removed; use **File | Print Setup** menu command instead.

SEPS

Displays the **Page Setup** dialog, in order to define the page size.

3.5.4 How to Configure AC 400 LON Devices for the LON Tool

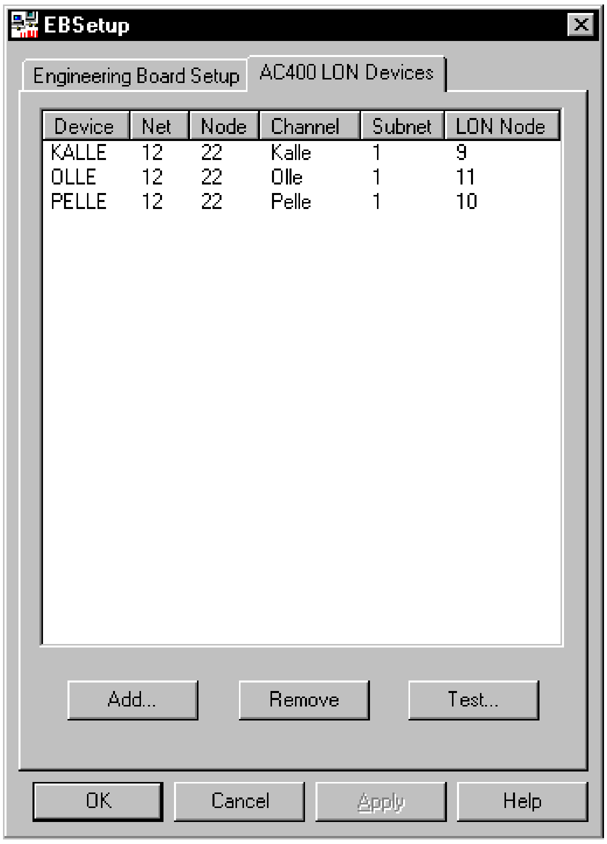
The following section applies if you want to connect a LONWORKS (LON) fieldbus to your AC 400 controller.

The AC400 LON interface board CI572 or CI573 can be used as a LON communication interface, in conjunction with the LON Network Management Tool LNT. To make a channel from the CI572 or CI573 available to the LNT, a virtual Windows NT device must be defined for this channel.

A name (like "KALLE" or "PELLE") is assigned to this NT device. In order to access the channel, additional information about the location of the channel is needed:

- The address of the AC400 node which hosts the CI572 / CI573
- The name of the channel in the AC400 data base

This dialog helps you to make new assignment, remove old ones and view the actual assignments. This information is local to your PC. So, if the configuration in the AC400 changes, you might have to adjust your settings.



Device	Net	Node	Channel	Subnet	LON Node
KALLE	12	22	Kalle	1	9
OLLE	12	22	Olle	1	11
PELLE	12	22	Pelle	1	10

Figure 3-2. AC 400 LON Devices dialog

This information is also available in the online help of On-line Builder's utility Engineering Board Setup. For more information on configuration of LON devices see *Advant Interface to LONWORKS, Advant Controller 400 Series, User's Guide (3BSE020250R1)*.

3.6 Configuration/Application Building Menus

3.6.1 File Menu

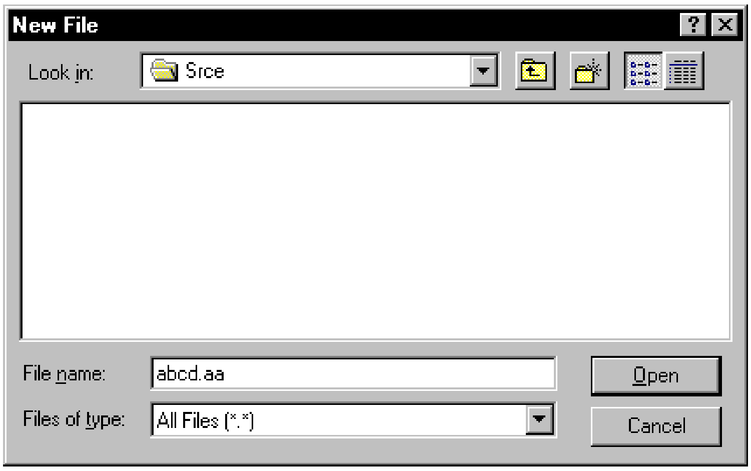
3.6.1.1 New

Use the **File | New** menu command to start an independent editor onto a new file.

On Advant Station 500 Series Engineering Stations On-line Builder starts the VUEPAD text editor. By use of 7-bit files no automatic conversion regarding national characters will be made as when starting the VUEPAD from the VUEFILE-MANAGER.

On Advant Station 100 Series Engineering Stations On-line Builder starts that editor, defined with the Application Builder's **Options | Preferences** menu command. The default editor is the AS100-EDIT text editor.

The following Windows NT standard dialog is then displayed:



Look in: Srce

File name: abcd.aa

Files of type: All Files (*.*)

Figure 3-3. New File Dialog

For help for this dialog, click ? in the upper right corner of the dialog window and point to the part of the dialog you want help for. Then the corresponding help text will pop-up.

After selecting a file and clicking the **OK** button, the On-line Builder starts the text editor.
Shortcuts

Toolbar button: 🗋

Keys: <**Ctrl+N**>

Dialog Controls

File Name
Type or select the file name you want to open. This box lists files with the extension you select in the List Files of Type box.

List Files of Type
Select the type of file you want to open:

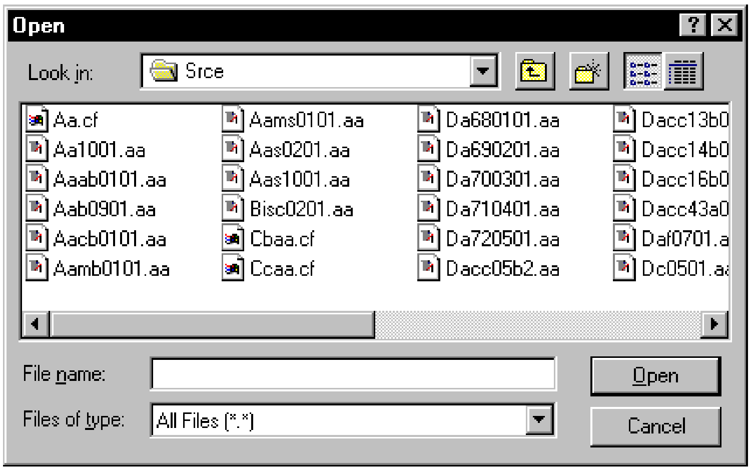
Look in
Select the network, drive and directory to create the file

3.6.1.2 Open

Use the **File | Open** menu command to start an editor onto a file.

On Advant Station 500 Series Engineering Stations On-line Builder starts the VUEPAD text editor.

Based on Windows 3.11 or Windows NT On-line Builder starts the editor defined with the Application Builder's **Options | Preferences** menu command. The default editor is the AS100-EDIT text editor.



Look in: Srce

Files of type: All Files (*.*)

Figure 3-4. Open Dialog

For help for this dialog, click ? in the upper right corner of the dialog window and point to the part of the dialog you want help for. Then the corresponding help text will pop-up.

After selecting a file and clicking the **OK** button, the On-line Builder starts the text editor.

Shortcuts

Toolbar button:

Keys: <**Ctrl+O**>

Dialog Controls

File Name
Type or select the file name you want to open. This box lists files with the extension you select in the **List Files of Type** box.

List Files of Type
Select the type of file you want to open.

Look in
Select the network, drive and directory to create the file

3.6.1.3 Open List File

Use this command to open an error list file. This command is useful after the TRDBS or TRPCS commands when errors have been reported, that is list files have been created.

Shortcuts

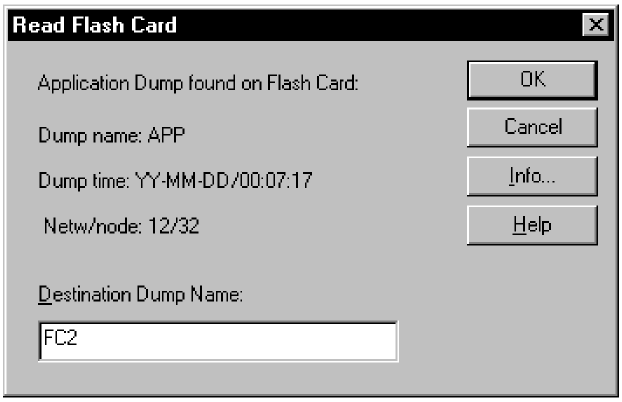
Keys: **<Ctrl+F>**

3.6.1.4 Read Flash Card

This command is available on Advant Station 100 Series Engineering Station, only.

Use the **File | Flash Card | Read** menu command to copy an application dump from a flash card to the SRCE directory.

This menu command is enabled if a session is selected.


Read Flash Card

Application Dump found on Flash Card:

Dump name: APP

Dump time: YY-MM-DD/00:07:17

Netw/node: 12/32

Destination Dump Name:

FC2

Figure 3-5. Read Flash Card Dialog

Use the **OK** button to copy the data from the flash card to the SRCE directory. Use the **Cancel** button to abort the command. Use the **Info** button to display an additional dialog (see Figure 3-6) showing detailed information about the application dump on the flash card.

For general information about flash cards see Section 3.1, Considerations.

Dialog Controls

Application Dump Found on Flash Card
Displays some information about the dump found on the flash card:

- Application dump name
- Date and time when the dump was created with the DUAP (Dump Application Program) command, and
- network and node number of the Advant Controller 400 Series on which the dump was created.

Only an application dump located on the root directory of the flash card will be displayed.

NOTE

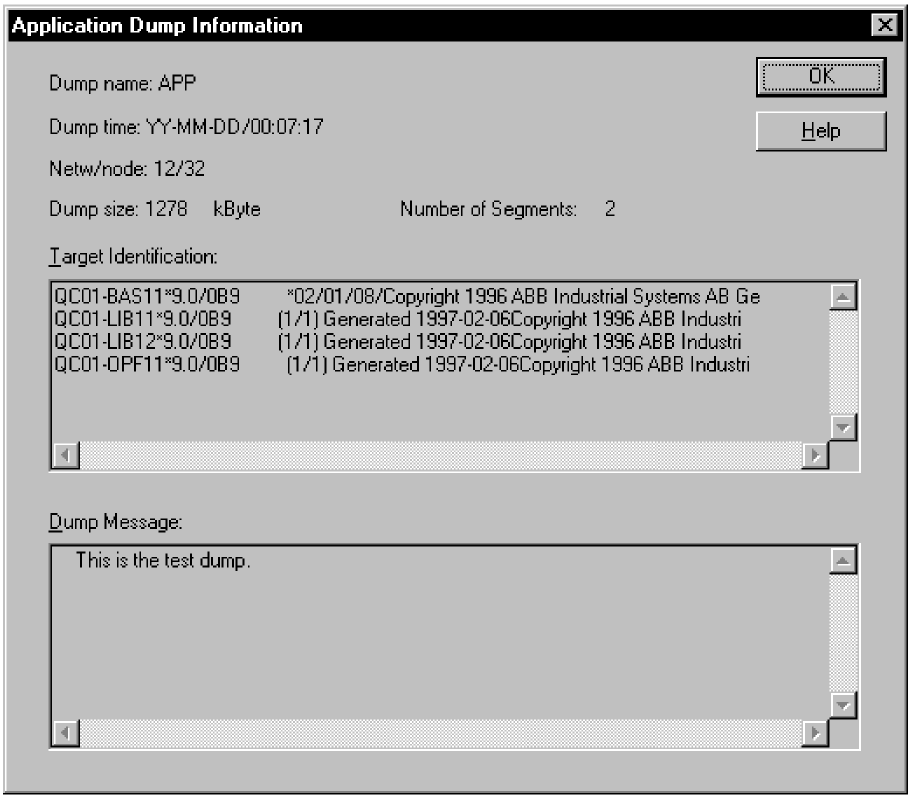
If there are subdirectories on the flash card created by another application, the files in those subdirectories are ignored by the Read Flash Card command.

It is not recommended to copy application dumps manually to the flash card.

Copy the dumps using the Write Flash Card command because it makes a verification check during the write procedure, which will be missing if you copy them manually. The same verification check will be made during the Read Flash Card command, when the files are copied from the flash card to the SRCE directory.

Besides, the file name is also stored in the dump. If the destination dump name differs from the source dump name, this internal name is modified by the Read Flash Card command. You cannot modify this internal file name manually.

Destination Dump Name
Enter a destination dump name



Dump name: APP

Dump time: YY-MM-DD/00:07:17

Netw/node: 12/32

Dump size: 1278 kByte Number of Segments: 2

Target Identification:

```
QC01-BAS11*9.0/0B9        *02/01/08/Copyright 1996 ABB Industrial Systems AB Ge
QC01-LIB11*9.0/0B9       (1/1) Generated 1997-02-06Copyright 1996 ABB Industri
QC01-LIB12*9.0/0B9       (1/1) Generated 1997-02-06Copyright 1996 ABB Industri
QC01-OPF11*9.0/0B9        (1/1) Generated 1997-02-06Copyright 1996 ABB Industri
```

Dump Message:

This is the test dump.

Figure 3-6. Application Dump Information Dialog

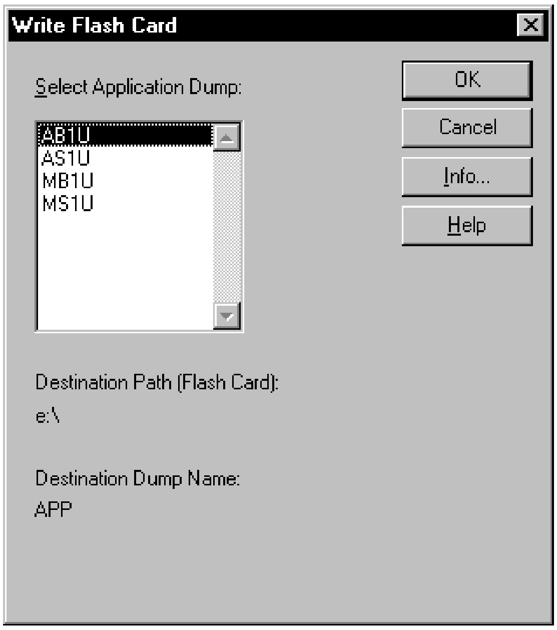
The dialog shows detailed information about the selected dump, for example the name and size. The target system, the dump was created with, is also displayed.

3.6.1.5 Write Flash Card

This command can only be used on Advant Station 100 Series Engineering Stations.

Use the **File | Flash Card | Write** menu command to copy an application dump (created with the DUAP command) from the SRCE directory to a flash card. Only the Microsoft Flash File System™ version 2.0 (FFS2) is supported by On-line Builder. This menu command requires a flash card formatted with the FFS2 file system.

This menu command is enabled if a session is selected



Select Application Dump:
AB1U
AS1U
MB1U
MS1U

Destination Path (Flash Card):
e:\

Destination Dump Name:
APP

Figure 3-7. Write Flash Card Dialog

Select an application dump from the list box. Use the **OK** button to write the flash card, use the **Cancel** button to exit the dialog. Use the **Info** button to display an additional dialog (see Figure 3-6) showing detailed information about the selected application dump.

CAUTION

Before the write procedure, all files in the root directory on the flash card will be deleted.

NOTE

It is not recommended to copy application dumps manually to the flash card. Copy the dumps using the Write Flash Card command because it makes a verification check during the write procedure, which will be missing if you copy them manually. Besides, the file name is also stored in the dump. If the destination dump name differs from the source dump name this internal name is modified by the Write Flash Card command. You cannot modify this internal file name manually.

For general information about flash cards see Section 3.1, Considerations.

Dialog Controls

Select Application Dump
Displays the names of the dumps which are found on the SRCE directory. Select a dump you want to copy to the flash card from this list.

Destination Path (Flash Card)
The flash card is represented as a drive. The drive name the application dump will be copied to is displayed here. You can change the destination drive via the **File | Flash Card | Parameters** menu command, see Figure 3-8.

Destination Dump Name
The destination dump name is set to "APP". It cannot be changed.

3.6.1.6 Format Flash Card

This command is available on Advant Station 100 Series Engineering Stations, only.

Use the **File | Flash Card | Format** menu command to erase the whole contents of the flash card and to format it with the Microsoft Flash File System version 2.0 (FFS2) file system. Only the FFS2 file system is supported by On-line Builder.

This menu command is enabled if a session is selected.

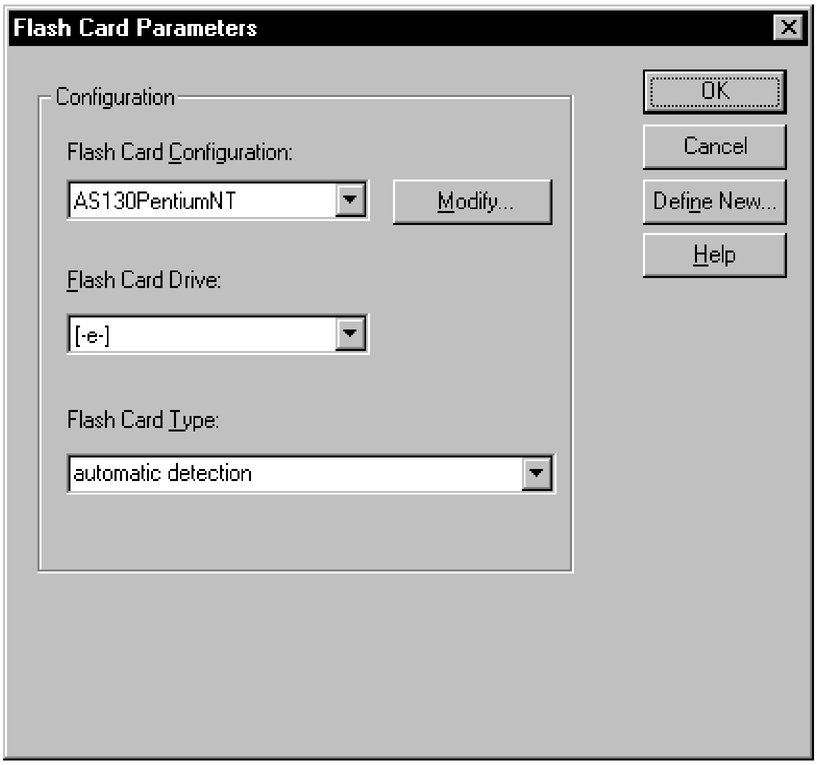
For general information about flash cards see Section 3.1, Considerations.

3.6.1.7 Flash Card Parameters

This command is available on Advant Station 100 Series Engineering Stations, only.

You can use the **File | Flash Card | Parameters** menu command to store the settings for formatting a flash card. You can also select a drive you want to use to read, write, or format a flash card. On Advant Station 100 Series Engineering Stations two drives are available.

This menu command is enabled if a session is selected.



Configuration

Flash Card Configuration: AS130PentiumNT

Flash Card Drive: [-e-]

Flash Card Type: automatic detection

Figure 3-8. Flash Card Parameters Dialog

In this dialog you can set the parameters which are necessary for the flash card software.

From the **Flash Card Configuration** list box select your configuration. From the **Flash Card Drive** list box select which drive you want to read from or write to. Use the **Flash Card Type** list box to enter or select the type of flash card. Usually, automatic detection is possible.

When you press the **Define New** button the **Define New Configuration** dialog (Figure 3-9) appears. Use this dialog when you want to select another hard- or/and software platform.

When you press the **Modify** button the **Modify Configuration** dialog (Figure 3-10) is displayed, where you can modify your configuration, for example in case you are using other hard- and/or software.

Use the **OK** button to store the settings. Please check those settings before formatting, reading, or writing a flash card.

For general information about flash cards see Section 3.1.1, Flash Cards.

Dialog Controls

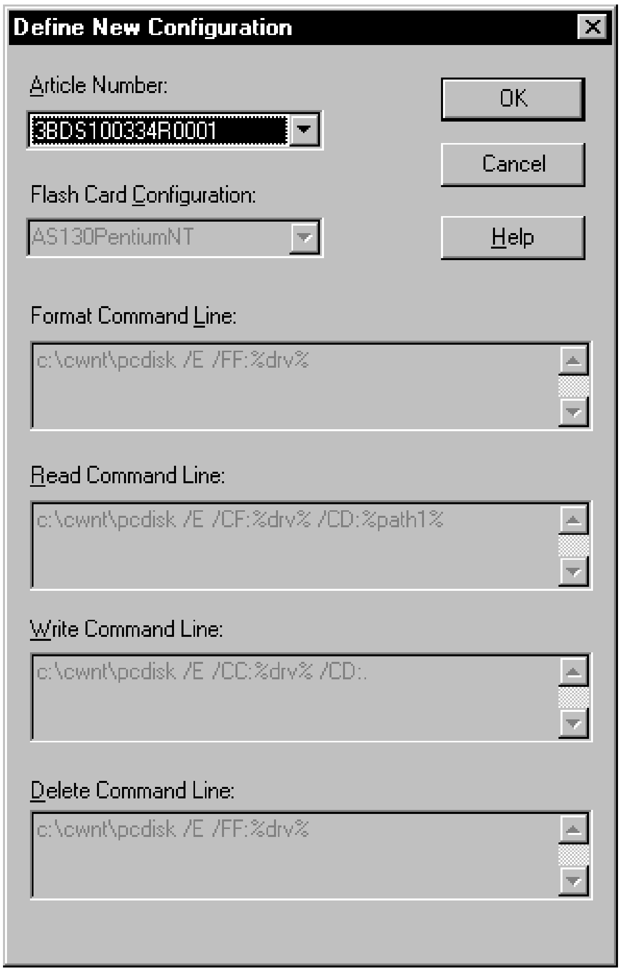
Flash Card Drive
The PCMCIA slot for the flash card is represented as a drive, which is displayed here. The default drive is "E:" for AS 130ES, "F:" for AS 120ES. On Advant Station 100 Series Engineering Stations this is the upper drive. If you want to use another drive, choose one from the list. For more information about PCMCIA see the *Advant Station 100 Series Environment User's Guide*.

Flash Card Configuration
The name of the configuration to read/write and format the flash card is displayed here.

For other PCMCIA software than the one used on Advant Station 100 Series Engineering Stations you have to define another configuration using the **Define New** button. You may also use the **Define New** button to select your version of Advant Station 100 Series Engineering Station.

Flash Card Type
If you do not use automatic detection of the flash card type, enter a valid flash card type to be used to format your flash card. By default, "automatic detection" is selected.

The following dialog is displayed when pressing the **Define New** button in the **Flash Card Parameters** dialog:



Article Number: 3BDS100334R0001

Flash Card Configuration: AS130PentiumNT

Format Command Line: c:\cwnt\pcdisk /E /FF:%drv%

Read Command Line: c:\cwnt\pcdisk /E /CF:%drv% /CD:%path1%

Write Command Line: c:\cwnt\pcdisk /E /CC:%drv% /CD:.

Delete Command Line: c:\cwnt\pcdisk /E /FF:%drv%

Figure 3-9. Define New Configuration Dialog

In this dialog you define the configuration of your PCMCIA hard- and software. To store the selected values press the **OK** button.

Dialog Controls

Article Number
From the **Article Number** list box select the article number of your Advant Station 100 Series Engineering Station. You find it on the housing if you remove the keyboard or – on Advant Station 130 Engineering Station (ISA) – the keyboard and the plastic shell. If you do not have an Advant Station 100 Series Engineering Station select the list box entry “Own Configuration”.

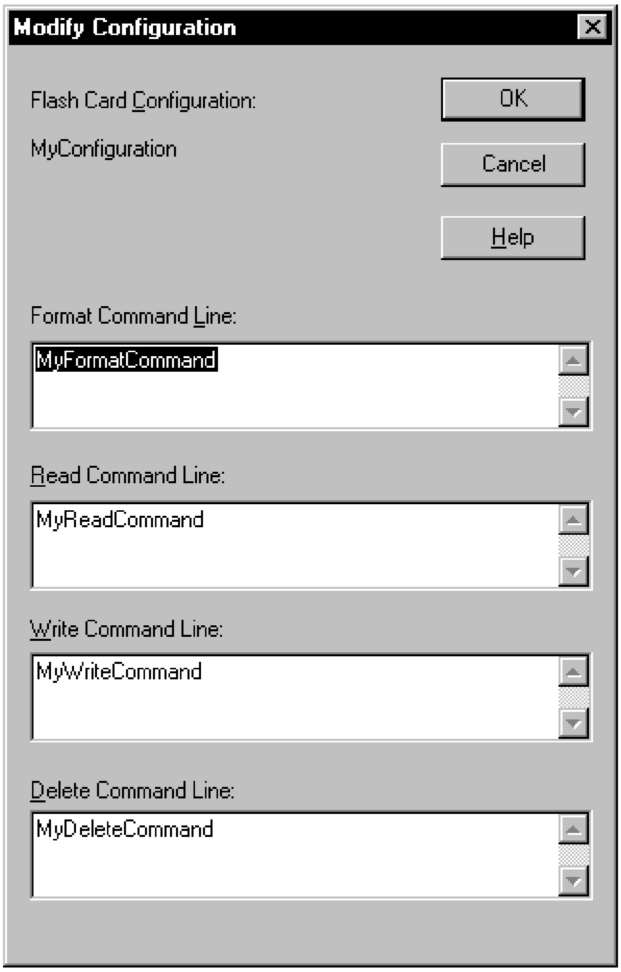
Flash Card Configuration
The **Flash Card Configuration** control is disabled when selecting an Advant Station 100 Series Engineering Station article number. It is enabled when you want to define an own configuration. Then enter a name in the **Flash Card Configuration** box.

Format Command Line
Read Command Line
Write Command Line
Delete Command Line
The **Command Line** controls are disabled when selecting an Advant Station 100 Series Engineering Station article number. It is enabled when you want to define an own configuration. Then enter the command line to format, read, write and delete a flash card which is required by your flash card software.

You can use the following, predefined parameters in your command lines. When the command line is executed, these parameters are replaced by their actual values.You see examples for the usage in the Figure 3-9.

- %drv%, i.e the selected drive without colon
  Example: E
- %drive%, i.e. the selected drive with colon
  Example: E:
- %path1%, i.e. the On-line builder will get and put the applications dumps from this %path1% and will execute a verify after the application dump is written to the flash card.
  Example: The path of the SRCE directory for the selected project and node is
  C:\proj\progr\nodes\flash1\srce
  Then %path1% is
  C:\proj\progr\nodes\flash1\list\mirror

With the **Modify Configuration** Dialog you modify already existing configurations



Modify Configuration

Flash Card Configuration:

MyConfiguration

Format Command Line:

MyFormatCommand

Read Command Line:

MyReadCommand

Write Command Line:

MyWriteCommand

Delete Command Line:

MyDeleteCommand

Figure 3-10. Modify Configuration Dialog

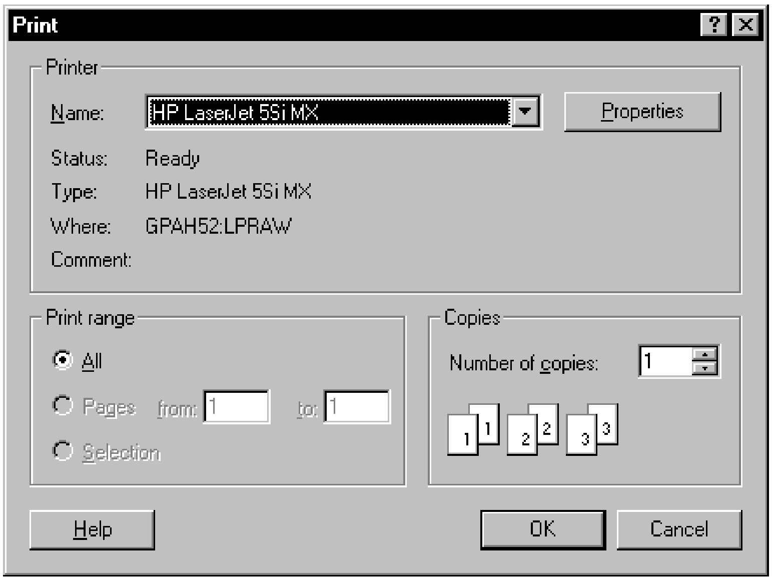
In this dialog you modify the configuration of your PCMCIA hard- and software. To store the selected values press the **OK** button.

Dialog Controls

Format Command Line
Read Command Line
Write Command Line
Delete Command Line
The **Command Line** controls are disabled when an Advant Station 100 Series Engineering Station article number is selected. They are enabled when you want to modify an own configuration. Then enter the command lines to read/write and format a flash card which is required by your flash card software.

3.6.1.8 Print

Use the **File | Print** menu command to print a document. You may specify the range of pages to be printed, the number of copies, the destination printer, and other printer setup options. The following Windows NT standard dialog is then displayed:



Name: HP LaserJet 5Si MX
Status: Ready
Type: HP LaserJet 5Si MX
Where: GPAH52:LPRAW
Comment:

● All
○ Pages from: 1 to: 1
○ Selection

Number of copies: 1

Figure 3-11. Print Dialog

Shortcuts

Toolbar button: 🖨

Keys: <**Ctrl+P**>

See also

Section 3.5.3, Printing and Section 3.6.1.10, Print Setup.

Dialog Controls

Printer

The active printer and printer connection. Use menu command **File | Print Setup** to change it.

Print Range

Specify the pages you want to print:

All	Prints the entire document.
Selection	This control is always disabled.
Pages	Prints the range of pages you specify in the From and To boxes.

Copies

Select the number of copies.

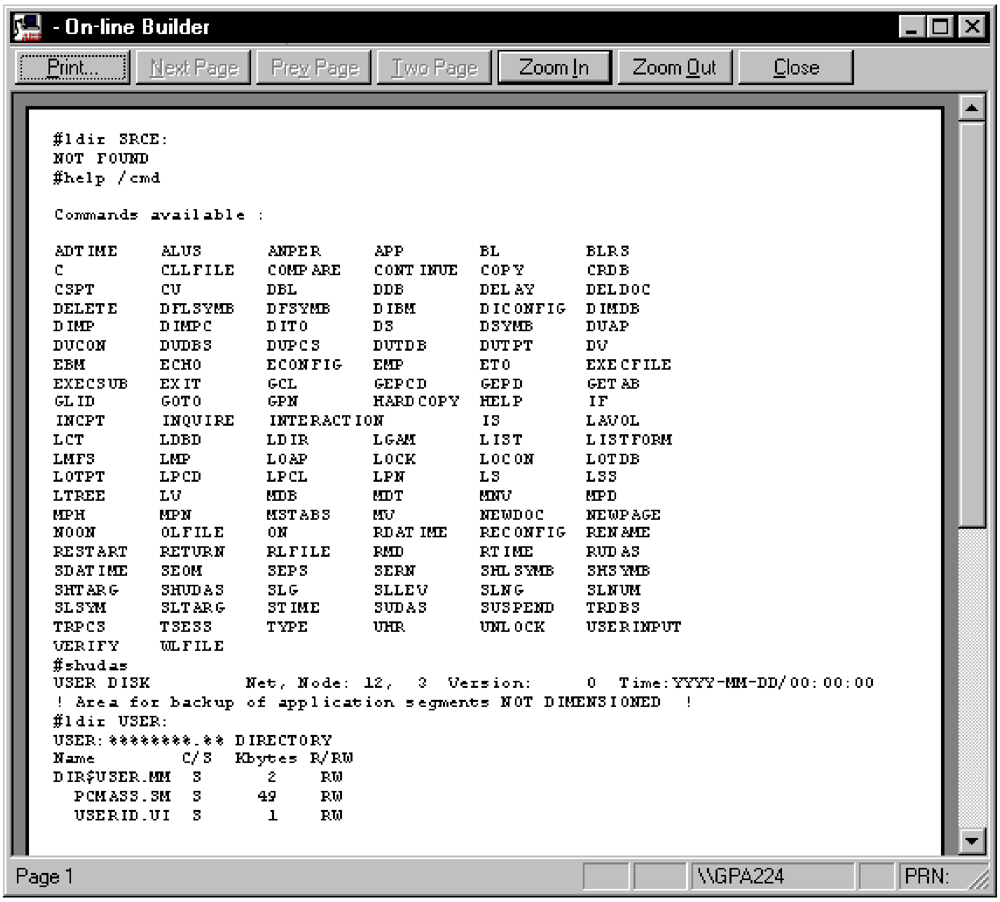
Properties

When you click the **Properties** button, the standard Windows NT **Properties** dialog pops up. Here you can select a printer and printer options.

3.6.1.9 Print Preview

Use the **File | Print Preview** menu command to display the active document as it would appear when printed. When you choose this menu command, the main window will be replaced with a print preview window in which one or two pages will be displayed in their printed format.

Various buttons are available to zoom in, zoom out, step through the pages, to call the **Print** dialog, and so on



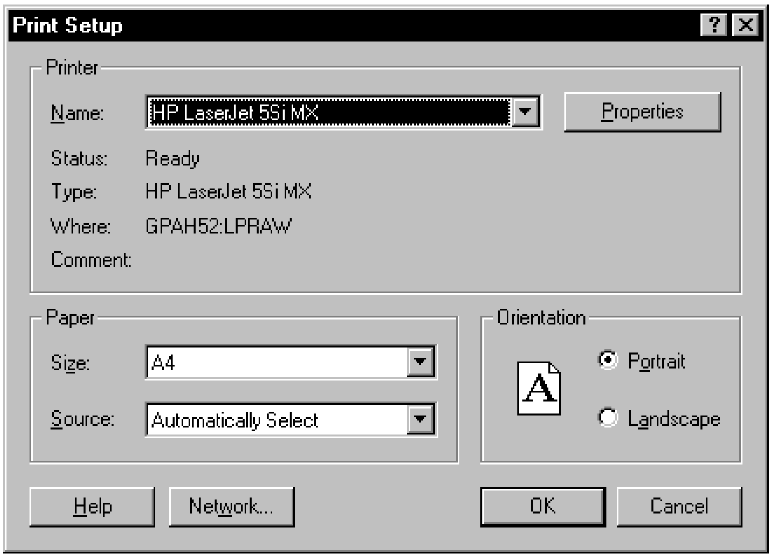
```
#ldir SRCE:
NOT FOUND
#help /cmd

Commands available :

ADTIME     ALUS       ANPER      APP        BL         BLRS
C          CLLFILE    COMPARE    CONTINUE   COPY       CRDB
CSPT       CU         DBL        DDB        DELAY      DELDOC
DELETE     DFLSYMB    DFSYMB     DIBM       DICONFIG   DIMDB
DIMP       DIMPC      DITO       DS         DSYMB      DUAP
DUCON      DUDBS      DUPCS      DUTDB      DUTPT      DV
EBM        ECHO       ECONFIG    EMP        ETO        EXECFILE
EXECSUB    EXIT       GCL        GEPCD      GEPD       GETAB
GLID       GOTO       GPN        HARDCOPY   HELP       IF
 INCPT      INQUIRE    INTERACTION           IS         LAVOL
LCT        LDBD       LDIR       LGAM       LIST       LISTFORM
LMFS       LMP        LOAP       LOCK       LOCON      LOTDB
LOTPT      LPCD       LPCL       LPN        LS         LSS
LTREE      LV         MDB        MDT        MNV        MPD
MPH        MPN        MSTABS     MV         NEWDOC     NEWPAGE
NOON       OLFILE     ON         RDATIME    RECONFIG   RENAME
RESTART    RETURN     RLFILE     RMD        RTIME      RUDAS
SDATIME    SEOM       SEPS       SERN       SHLSYMB    SHSYMB
SHTARG     SHUDAS     SLG        SLLEV      SLNG       SLNUM
SLSYM      SLTARG     STIME      SUDAS      SUSPEND    TRDBS
TRPCS      TSESS      TYPE       UHR        UNLOCK     USERINPUT
VERIFY     WLFILE
#shudas
USER DISK          Net, Node: 12,  3  Version:     0  Time:YYYY-MM-DD/00:00:00
! Area for backup of application segments NOT DIMENSIONED  !
#ldir USER:
USER:********.** DIRECTORY
Name          C/S  Kbytes  R/RW
DIR$USER.MM    S      2     RW
  PCMASS.SM    S     49     RW
  USERID.UI    S      1     RW
```

Figure 3-12. Print Preview Dialog

3.6.1.10 Print Setup

Use the **File | Print Setup** menu command to select a printer and a printer connection.

The following Windows NT standard dialog is then displayed:



Name: HP LaserJet 5Si MX
Status: Ready
Type: HP LaserJet 5Si MX
Where: GPAH52:LPRAW
Comment:
Size: A4
Source: Automatically Select
● Portrait
○ Landscape

Figure 3-13. Print Setup Dialog

For help for this dialog, click ? in the upper right corner of the dialog window and point to the part of the dialog you want help for. Then the corresponding help text will pop-up.

See also

Section 3.5.3, Printing and Section 3.6.1.8, Print.

Dialog controls

Printer
Select the printer you want to use out of one of the current installed printers shown in the box. You install printers and configure ports using the Windows control panel.

Orientation
Choose **Portrait** or **Landscape**.

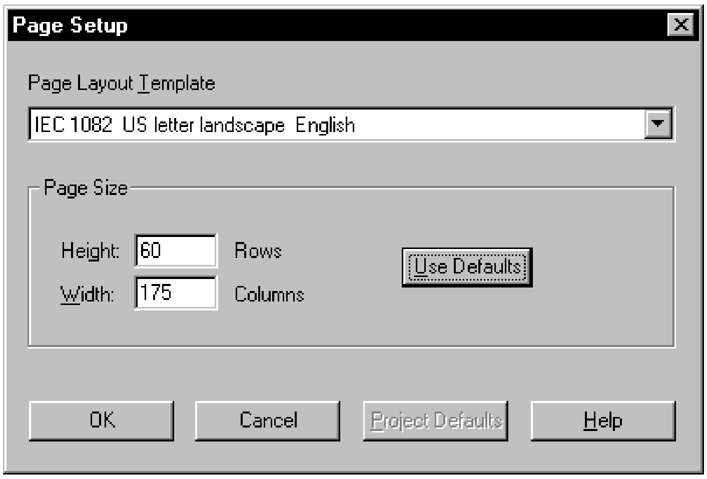
Paper Size
Select the size of paper that the document is to be printed on.

Paper Source
Some printers offer multiple trays for different paper sources. Specify the tray here.

Properties:
The standard windows property page dialog is displayed.

3.6.1.11 Page Setup

Use the **File | Page Setup** menu command (always active) to choose a layout template and set page size for your diagrams. The **Page Setup** dialog does also pop up when you use the **SEPS** command. The following dialog is displayed:



Page Layout Template: IEC 1082 US letter landscape English

Height: 60 Rows

Width: 175 Columns

Figure 3-14. Page Setup Dialog

General Information on the Page Layout Templates

Four different kinds of page layout templates exist:

- Standard Master
- IEC 1082
- DIN 6671
- Plain

Each of the page layout templates are available in different formats and orientations:

- Portrait
- Landscape
- A3
- A4
- Letter
- Legal

NOTE

Not all formats and orientations are available for each page layout templates. All page layouts are available in english only.

Perform as follows if you want to change a Page Layout Template:

1. Start up the **Page Setup** dialog and change the document type to that type you want to use (choose the correct format and orientation).
2. Click on the **Use Defaults** button, in order to change the **Rows** and **Columns** values, which fit to the document type chosen.

NOTE

If you change only a format or orientation of a page layout template, then the already introduced document texts (**Edit Document Texts** dialog) will be copied and remain the same.
If you change between the four different kinds of page layout templates, then the document texts must be introduced another time (if they were existent before).

Alternatively you can change an existing document type by clicking the **Project Defaults** button. You use then the predefined page layout template, rows and columns values and document texts.

Dialog Controls

Page Layout Template
Select the page layout template for your diagrams from the items of the list box.

Height and Width
Enter the number of rows and columns for a diagram page

Click the **Use Defaults** button to fetch default values corresponding to the page layout template. The number of rows and columns are calculated based on the printable area.

Use Defaults
Click this button, in order to fetch default values corresponding to the default page layout template.

Project Defaults
Click this button to fetch the project defaults for layout (layout template and actual page size) as specified with the menu command **Options | Project Defaults**. The button is inactive, if no project defaults regarding the page setup are specified.

3.6.1.12 Delete Print Document

Use the **File | Delete Print Document** menu command to delete the contents of the On-line Builder's printer document without printing it.

3.6.1.13 Exit

Use the **File | Exit** menu command to end your On-line Builder session. You can also use the **Close** menu command on the application control menu. The On-line Builder prompts you to save documents with unsaved changes.

In the following situations the On-line Builder will display a warning message:

- The session with the target system has not been terminated
- The CX operating system running on the engineering board has not closed all its files
  - The **OLFILE** command without closing it with the **CLLFILE** command
  - An executing command file
  - Aborting an executing command

CAUTION
Executing this function may cause loss of data!

- The printer document is not empty.

Shortcuts

Mouse:	Double-click the On-line Builder's control menu button.
Keys:	<**Alt+F4**> on Advant Station 100 Series Engineering Stations, <**Ctrl+C**> on Advant Station 500 Series Engineering Stations.

3.6.2 Edit Menu

3.6.2.1 Copy

Use the **Edit | Copy** menu command to copy selected data to the clipboard. This menu command is not available if there is no data selected. Copying data to the clipboard replaces the clipboard content and deletes the previously stored data (see also Section 3.5.2.3, Copy & Paste).

In addition to text, you can also select graphics.

Shortcuts

Keys:	<**Ctrl+Insert**>

3.6.2.2 Paste

Use the **Edit | Paste** menu command to insert the clipboard content to the command line at the cursor's position. Invalid characters will be ignored. This menu command is not available if the clipboard contains no data (see also Section 3.5.2.3, Copy & Paste).

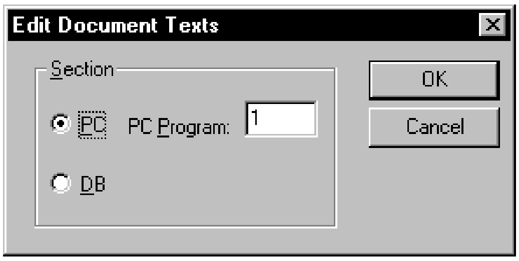
In addition to text, you can also paste graphics into a graphics tool.

Shortcuts

Keys: <**Shift+Insert**>

3.6.2.3 Document Texts

Use the **Edit | Document Texts** menu command to display the following dialog where you can specify whether you want to edit the document texts for DB or PC:



● PC PC Program: 1

○ DB

Figure 3-15. Edit Document Texts

Press the **OK** button to open the following Edit Document Texts dialog.

This dialog does also pop up when you use the **MDT** (Modify Document Text) command.

Use this dialog to specify the text fields of the document texts:

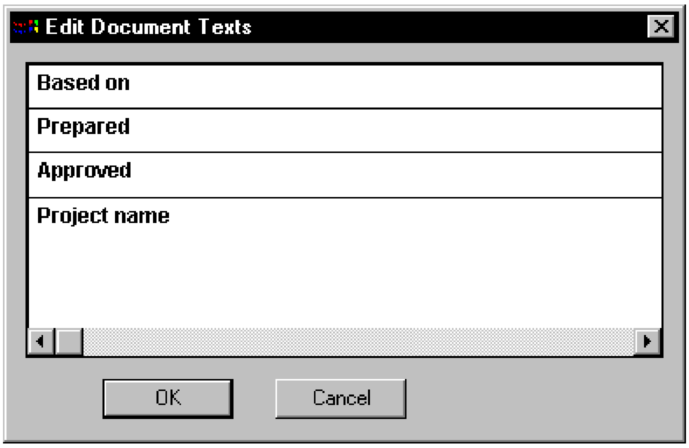


Figure 3-16. Edit Document Texts

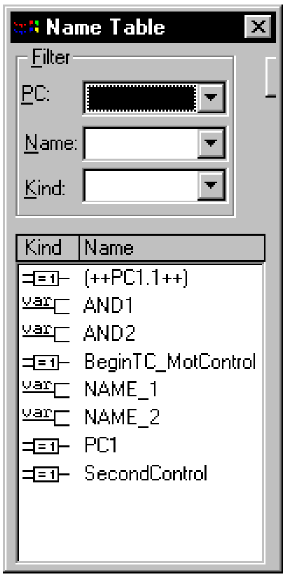
Document texts appear at the bottom of each page of the documentation. The dialog box shows only a part of the document texts, use the scroll box to see the other parts of it.

Press <**tab**> or <**shift+tab**> (for the opposite direction) to move the cursor to the text fields of the template and type the text you wish to appear in the document texts.

3.6.3 View Menu

3.6.3.1 Name Table

Use the **View | Name Table** menu command to display and hide the name table view. This menu command is only available if the On-line Builder is in the PC level mode (# prompt). The following window is displayed:



Kind	Name
=1	(++PC1.1++)
var	AND1
var	AND2
=1	BeginTC_MotControl
var	NAME_1
var	NAME_2
=1	PC1
=1	SecondControl

Figure 3-17. PC Variables View

Dialog Controls:

PC Program
This list box contains all existing PC programs and the entry "all". You can either select to display variables for a certain PC program or list all variables of all PC programs.

Filter
You can enter a filter for the variable names you want to be displayed. The filter can be any character or a wild card ("*": a number of characters; "?": one character). The last used ten filters are stored in this list box.

Kind
You can select between **PC Variables**, **Instances** or all. When you select PC Variables or Instances, only the selected names will be shown. If you select all, both categories will be displayed.

PC Variables are unique names for terminals, while **Instances** are unique names for PC elements. The Variable Name list box displays all variable names sorted in alphabetical order. Single selection is possible. You can copy the selected variable name into the clipboard (<**Ctrl+Insert**>) and paste it as text into the On-line Builder window (<**Shift+Insert**>).

The variable name can also be copied into the On-line Builder window using the right mouse button. Just select the variable name, set the focus on the On-line Builder window, and then press the right mouse button to copy and paste the variable name.

3.6.3.2 Toolbar

Use the **View | Toolbar** menu command to display and hide the toolbar, which includes buttons for some of the most common commands in On-Line Builder, such as **File | Open**. A check mark appears next to the menu item when the toolbar is displayed.

Default: Toolbar is on

Toolbar

The toolbar is displayed across the top of the application window, below the menu bar. The toolbar provides quick mouse access to many tools used in On-line Builder.

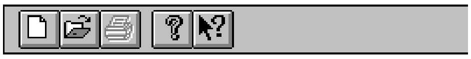


Figure 3-18. Toolbar

Toolbar buttons exist for the following menu commands:

- **File | New** menu command.
- **File | Open** menu command.
- **File | Print** menu command.
- **Help | Contents** menu command.
- **Help | On Context** menu command.

3.6.3.3 Status Bar

Use the **View | Status Bar** menu command to display and hide the status bar, which describes the action to be executed by the selected menu item or depressed toolbar button, and keyboard latch state. A check mark appears next to the menu item when the status bar is displayed.

Default: Status bar is on.

Status Bar

The status bar is displayed at the bottom of the On-line Builder window. To display or hide the status bar, use the **View | Status Bar** command.

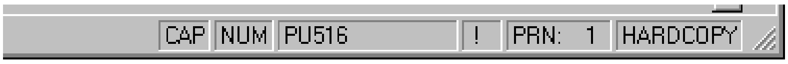


Figure 3-19. Status Bar

The status bar of the On-line Builder consists of 7 fields from left to right:

- Displays a short description of the current menu command when you navigate through menus.
- Displays the Caps-lock status:

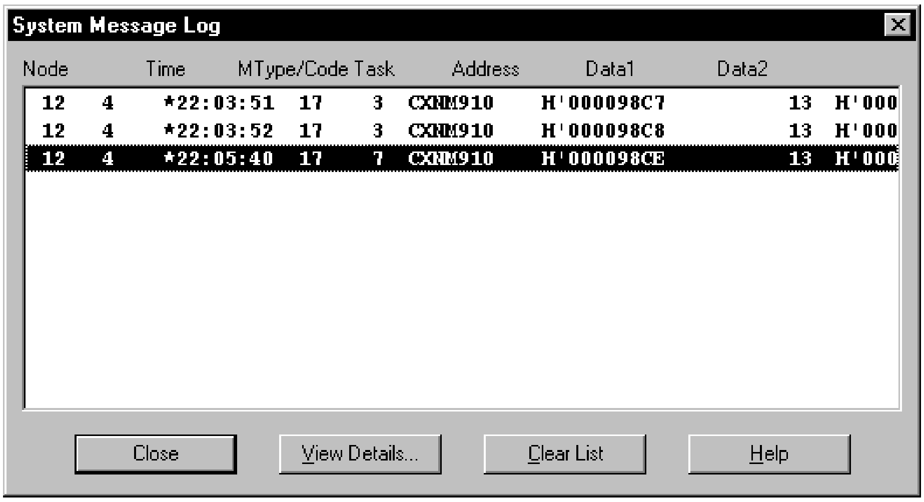
  CAP: The **Caps Lock** key is latched down.
- Displays the Num-lock status:

  NUM: The **Num Lock** key is latched down.
- Displays the item designation of the engineering board. The abbreviations are:

  DSPU131 — Advant Station 100 Series Engineering Board – ISA
  PU516 — Advant Station 100 Series Engineering Board – PCI
  PU513 — Real Time Accelerator Board
- When you see an exclamation-mark system messages have been appeared and they are only logged into the **System Message Log** dialog. How to modify the System Message Handling is described in the Section 3.6.4, Options Menu
- Displays the number of pages in the On-line Builder's print document
- Displays the hardcopy flag.

3.6.3.4 System Message Log

Use the **View | System Message Log** menu command to get a list of system messages. The following dialog is displayed:



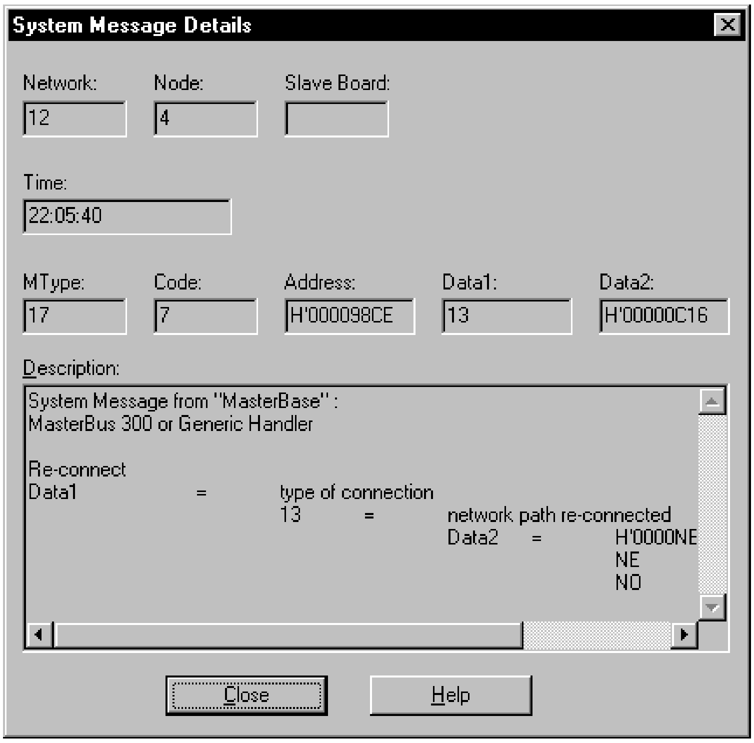
```
Node        Time       MType/Code Task     Address       Data1        Data2
 12    4    *22:03:51   17      3   CXNM910   H'000098C7          13  H'000
 12    4    *22:03:52   17      3   CXNM910   H'000098C8          13  H'000
 12    4    *22:05:40   17      7   CXNM910   H'000098CE          13  H'000
```

Figure 3-20. System Message Log

Select a system message and press the **View Details...** button to open the System Message Details dialog which displays detailed information on the selected system message.

Press the **Clear List** button to remove all system messages from the list.

Press the **Close** button to close this dialog.



Network: 12
Node: 4
Slave Board:
Time: 22:05:40
MType: 17
Code: 7
Address: H'000098CE
Data1: 13
Data2: H'00000C16

Description:

```
System Message from "MasterBase" :
MasterBus 300 or Generic Handler

Re-connect
Data1            =        type of connection
                          13        =        network path re-connected
                                             Data2     =        H'0000NE
                                                                NE
                                                                NO
```

Figure 3-21. System Message Log Details

Dialog controls

Network and Node
Displays the network and node of the system in which the system message was generated. If net and node are not displayed, the system message was generated by On-line Builder itself.

Slave Board
The slave number is not printed if the system message comes from the master.

Time
The time when the system message was generated.

MType and Code
Message type and code specify the error category.

Address
If available, the task address is displayed

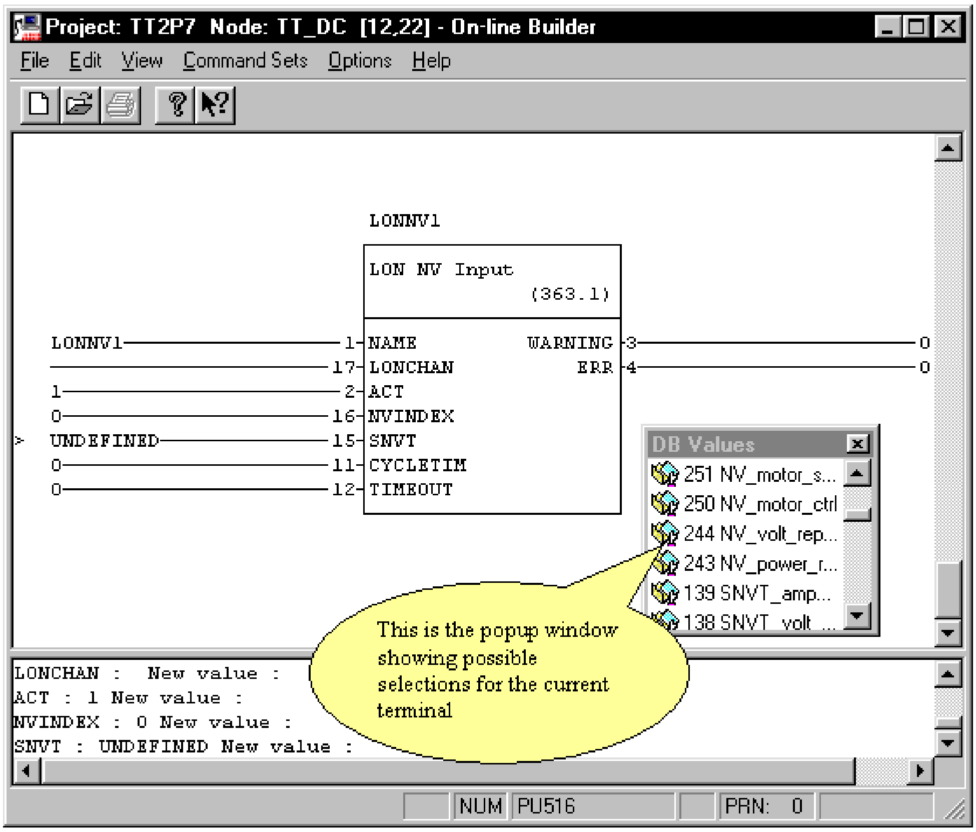
Data1 and Data2
If available, additional information about the system message is displayed.

Description
A detailed description of the system message.

3.6.3.5 DB Popup Window

Use the **View | DB Popup Window** menu command to enable or disable the popup window that shows possible values and data ranges during data base modifications.

If this check menu is enabled, the On-line Builder will display the following window when running the commands MDB or CRDB:



This is the popup window showing possible selections for the current terminal

```
LONCHAN :   New value :
ACT : 1 New value :
NVINDEX : 0 New value :
SNVT : UNDEFINED New value :
```

Figure 3-22. DB Popup Window

Note: the contents of this window changes, depending of the selected DB element terminal. Double click an entry in the list to copy its value into the command line.

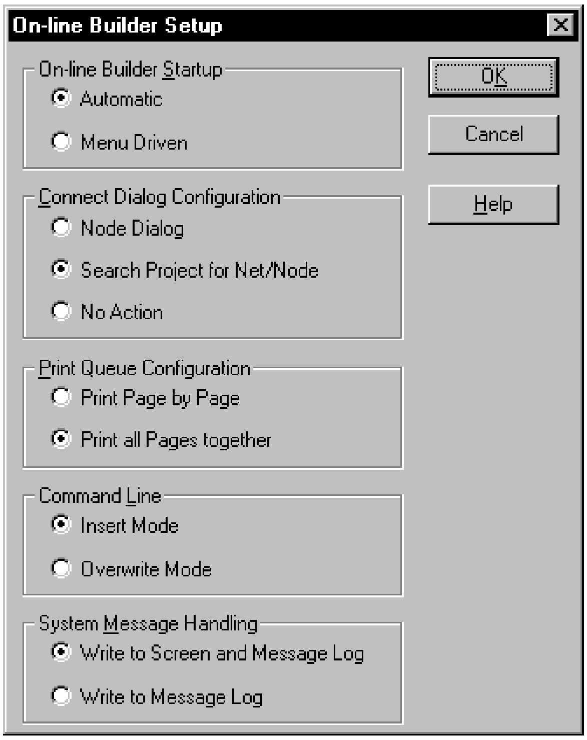
This information is also available in the online help of On-line Builder in topic Menu commands | View Menu | DB Popup Window.

Default: DB Popup Window is enabled

3.6.4 Options Menu

3.6.4.1 Setup

Use the **Options | Setup** menu command to setup defaults of On-line Builder. All defaults are saved in a file and restored when On-line Builder starts up. If the file does not contain proper defaults or if the file has been deleted, On-line Builder starts with the original default values:



On-line Builder Setup

On-line Builder Startup
● Automatic
○ Menu Driven

Connect Dialog Configuration
○ Node Dialog
● Search Project for Net/Node
○ No Action

Print Queue Configuration
○ Print Page by Page
● Print all Pages together

Command Line
● Insert Mode
○ Overwrite Mode

System Message Handling
● Write to Screen and Message Log
○ Write to Message Log

Figure 3-23. On-line Builder Setup

On-line Builder Start-up

Use this section of the **Options | Setup** menu command to define the On-line Builder start-up. The start-up is described in Section 3.3, Application Start-up, too.

Automatic
If you select the **Automatic** button, On-line Builder automatically starts a session with the selected target system when called from the Application Builder or Structure Builder. The session type is “Remote via Network”.

Menu Driven
If you select the **Menu Driven** button,

– you get always the start-up menu when starting the On-line Builder to choose the session type. (valid for Advant Station 100 Series Engineering Board – ISA)

- you always enter the local level "?" when starting the On-line Builder.
  (valid for Advant Station 100 Series Engineering Board – PCI and RTA Board)

Connect Dialog Configuration

Use this section of the **Options | Setup** menu command to define the On-line Builder's behavior when selecting different nodes in a network.

Node Dialog
Select the **Node Dialog** button to call the **Node Setup** dialog automatically when the **SLTARG** command is executed (see Section 3.6.7.1, Node Setup). It is useful to disable this option when **SLTARG** is executed from within a CX command file.

Search Project for Net/Node
Select the **Search Project for Net/Node** button to let the On-line Builder search for another node in the selected project. If it finds exactly one node in the current project which has the same net and node number as the selected node then the USER and SRCE directories are reconnected to this directory structure. If no, or more than one node with the selected network and node numbers are found, the On-line Builder displays the **Node Setup** dialog and you can select manually.

No Action
Select the **No Action** button to disable any automatic action. The USER and SRCE directories remain unchanged; no **Node Setup** dialog pops up. This selection is useful when executing an CX command file (e.g. **DUAP** of complete plant).

Print Queue Configuration

Use this section of the **Options | Setup** menu command to define the print queue configuration (see Section 3.5.3, Printing):

Print Page by Page
Select the **Print Page by Page** button if you want to print page by page as single print jobs.That means that each page is printed directly when a new page has been started.

-Print all Pages together
Select the **Print all Pages together** button if you want to print all pages as one print job (e.g. if you are using a network printer).By default, this option is selected.

When you start printing (**File | Print**) the On-line Builder collects all the printer output in a temporary file. The field "PRN" in the status line informs you about the number of pages currently stored in your buffer.

Command Line

Use this section of the **Options | Setup** menu command to define the insert mode or the overwrite mode for the command line. Select the according check button.

See Section 3.5.2.1, Keys and Default Mode for more information about command line editing.

System Message Handling

Use this section of the **Options | Setup** menu command to define the handling for system messages. Select the according check button.

3.6.4.2 Reboot Engineering Board

This command is available when using AS 100EB, only.

Use the **Options | Reboot Engineering Board** menu command to reboot the engineering board.

NOTE

All running sessions will be terminated.

CAUTION

Executing this function may cause loss of data and may result in an inconsistent state in a target system! Open files may be unusable afterwards.

3.6.4.3 Restart Engineering Board

This command is available when using RTA Board, only.

Use the **Options | Restart Engineering Board** menu command to restart the engineering board. This command does not perform a reboot of the board. This can be performed by other applications like AdvaCommand. It resets the environment for On-line Builder, only.

NOTE

All running sessions will be terminated.

CAUTION

Executing this function may cause loss of data and may result in an inconsistent state in a target system! Open files may be unusable afterwards.

3.6.4.4 Search for Command

Use the **Options | Search for Command** menu command to search in the command roll-back buffer for an On-line Builder command line. See Section 3.5.2.2, Command Line Roll-Back.

Shortcuts

Keys:	<**F8**>

See also

Section 3.5.2.2, Command Line Roll-Back.

3.6.5 Command Sets Menu

This menu is only available, when On-line Builder runs on the Advant Station 100 Series Engineering Board – PCI or on the RTA Board. The following menu commands are available:

:

Table 3-5. Command Sets Menu Commands

Menu Command	Submenu Command
Advant Controller 400	Advant Controller 400 Programming Blocking on Overload(1) Post Mortem Analysis(1) Switching Running PC Programs
Advant Station 500 Operator Station	-
Advant Station 500 Engineering Station	-
MasterPiece 200	MasterPiece 200 Programming Blocking on Overload(1) Post Mortem Analysis(1) Switching Running PC Programs
MasterView 800	MasterView 800 Programming Post Mortem Analysis(1)
MasterBus 300	-
MasterGate 230	MasterGate 230 Programming Post Mortem Analysis(1)
MasterPiece 51	-
Advant Station 100 Engineering Station	-
More	Expert Commands AccuRay board handling User defined Set 1 (DEAR91A0) User defined Set 2 (DEAR92A0) User defined Set 3 (DEAR93A0) User defined Set 4 (DEAR94A0) User defined Set 5 (DEAR95A0)

(1) The menu entries Blocking on Overload, Post Mortem Analysis are not available for RTA board.

3.6.6 Help Menu

3.6.6.1 Contents

Use this menu command to display the opening On-line Builder help screen. From the opening screen you can jump to step-by-step instructions for using On-line Builder and various types of reference information.

Once you open help, you can click the **Contents** button whenever you want to return to the opening screen.

Shortcuts

Toolbar button: ?

3.6.6.2 On Context

Use the **Help | On Context** menu command to obtain help on some portion of On-line Builder. When you choose the toolbar's **On Context** button, the mouse pointer will change to an arrow and question mark. Then click somewhere in the On-line Builder window, such as another toolbar button. The help topic will be shown for the item you clicked.

Shortcuts

Toolbar button: ↖?

Keys: <**Shift+F1**>

3.6.6.3 How to Use Help

Use the **Help | How to Use Help** menu command for instructions about using help.

3.6.6.4 On-line Builder Commands

Use the **Help | On-line Builder Commands** menu command to open the On-line Builder Command Reference help.

3.6.6.5 DB Element Reference

This command is available on Advant Station 100 Series Engineering Stations, only.

The menu command **Help | DB Element Reference** is available depending on the node type of the selected node. Use it to open the *Data Base Elements Advant Controller 400 Reference Manual* for the node types Advant Controller 410 and Advant Controller 450.

If the menu item is not available, install the On-line Manuals according to the instructions in the *AMPL PC and DB Element Libraries Release Notes*, Chapter 3 Installation.

On Advant Station 500 Series Engineering Stations you can open the *Data Base Elements Advant Controller 400 Reference Manual* via the **DB_MANUAL** view of a node object in the Structure Builder.

3.6.6.6 PC Element Reference

This command is available on Advant Station 100 Series Engineering Stations, only.

The menu command **Help | PC Element Reference** is available depending on the node type of the selected node. Use it to open the *PC Elements Advant Controller 400 Reference Manual* for the node types Advant Controller 410 and Advant Controller 450.

If the menu item is not available, install the On-line Manuals according to the instructions in the *AMPL PC and DB Element Libraries Release Notes*, Chapter 3 Installation.

On Advant Station 500 Series Engineering Stations you can open the *Data Base Elements Advant Controller 400 Reference Manual* via the **PC_MANUAL** view of a node object in the Structure Builder.

3.6.6.7 Release Notes

Use this menu command to open the On-line Builder Release Notes containing:

- General information on the On-line Builder version
- New functions, improvements, discontinued and replaced functions of the On-line Builder version; fixed or known problems, restrictions, and recommendations
- Installation and un-installation of the On-line Builder version

3.6.6.8 About On-line Builder

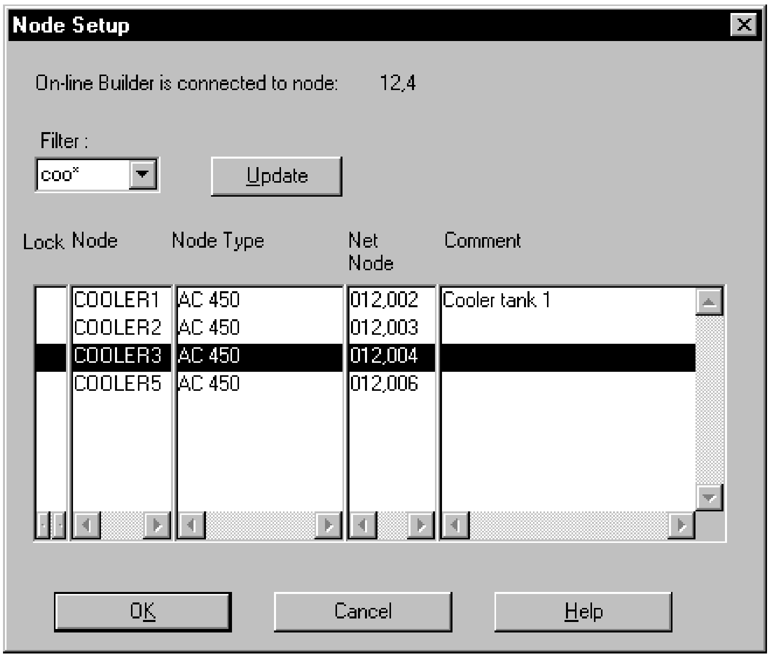
Use the **Help | About On-line Builder** menu command to display the copyright string and version number of your copy of On-line Builder.

3.6.7 Other Dialogs

3.6.7.1 Node Setup

The **Node Setup** dialog automatically pops up when you select a new target system via the CX operating system. In some cases it is useful to disable this automatic function. You can select two other modes via the menu command **Options | Setup** (see Section 3.6.4.1, Setup).

Use the **Node Setup** dialog to define the node you want to work on. With the definition of the node a corresponding working environment on your engineering station is chosen also, which is used to read/write files which are requested/created by the On-line Builder commands:



On-line Builder is connected to node: 12,4

Filter : coo*

Lock	Node	Node Type	Net Node	Comment
	COOLER1	AC 450	012,002	Cooler tank 1
	COOLER2	AC 450	012,003	
	COOLER3	AC 450	012,004	
	COOLER5	AC 450	012,006	

Figure 3-24. Node Setup

See also

Section 3.6.4.1, Setup.

Dialog Controls

On-line Builder is connected to Node
Displays the net and node number of the target system. In this case "12,4" is displayed.

Filter
You can insert a filter for the nodes you want to be displayed. The filter can be any letter, number, underscore or a wild card ("*": a number of characters; "?": one character).

Update
Use the **Update** button to update the displayed node list. This is useful especially for server installations.

Node List
The node list displays the existing nodes of a project alphabetically. If you use the filter function, the according sub set of nodes is displayed only. Use the **Update** button to update the displayed node list. This is useful especially for server installations.

When you have selected a node (the node is displayed with inverse characters), you can click the **OK** button. In the left column the Locking information is displayed.

Chapter 4 Runtime Operation

4.1 Operating Overview

Not applicable.

4.2 Runtime Tutorial

Not applicable.

4.3 Operating Instructions

Not applicable.

4.4 Runtime Operation Menus

Not applicable.

Chapter 5 Maintenance

5.1 Error Messages

Not applicable.

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